Francis Palma, Ph.D.

www.francis-palma.net
DBLP | Google Scholar | LinkedIn | UNB

Research Interests

- Empirical Software Engineering
- Patterns and Antipatterns in Web APIs
- Software Design and Implementation Quality
- Software Maintenance and Evolution
- Source Code Analysis and Natural Language Processing
- Requirements Engineering
- Machine Learning in Software Engineering
- Internet of Things (IoT)

Current Position

- **Assistant Professor**
  From September 2022 to present
  Faculty of Computer Science
  University of New Brunswick, Canada
  www.cs.unb.ca/~x8kq8/

Publications Summary

- International journal articles published	9
- International conference/workshop proceedings published	25
- Patents published	2

Education

- **Doctor of Philosophy** (Ph.D.), 2015
  Computer Engineering (Software Engineering)
  University of Montreal, Canada
  Thesis title: Unifying Service Oriented Technologies for the Specification and Detection of their Antipatterns (***Awarded Best Thesis 2015 in the Department***, *Nominated for the Best Thesis in the University 2015*).

- **Master of Science** (M.Sc.), 2010
  Computer Science (Software Technologies)
  University of Trento, Italy
  Thesis title: Using Interactive Genetic Algorithm for Requirements Prioritization.

- **Bachelor of Science** (B.Sc.), 2005
  Computer Science and Engineering
  International Islamic University Chittagong (IIUC), Bangladesh
  Thesis title: An Efficient Technique for Text Compression.

Professional Training /Workshops

- **Supervision in Postgraduate Programmes (SPGP)**
  Completed in 2020
  Training Details on https://lnu.se/en/medarbetare/employed-at-lnu/professional-development-and-career-paths/supervision-in-postgraduate-programmes/
- **Educator's Workshop**: The 15th SEI Software Engineering Educators Workshop, Pittsburgh, PA, July 31 - August 2, 2018. Workshop on (1) DevOps in Practice and (2) Managing Technical Debt of Software.

Teaching / Supervising Experiences

CS3505 Systems Analysis, Design and Project Management 4 credits (BSc), UNB
Winter 2023 (January – April) – teacher

CS2545 Data Science for Big Data Analytics 3 credits (BSc), UNB
Winter 2023 (January – April) – teacher

4ME307 Internet Architectures 7.5 credits (MSc), LNU
Spring 2019 (March – June) – course manager, teacher
Spring 2020 (March – June) – course manager, teacher
Spring 2021 (March – June) – course manager, teacher
Spring 2022 (March – June) – course manager, teacher

- Overview of relevant concepts and contemporary approaches to design and

implement web architectures.
- Integration approaches and techniques for bridging web & mobile apps.
- Data management approaches & techniques for developing large web apps.
- Case studies for making appropriate design decisions for scalable and robust web architectures.

2DV604 Software Architectures 7.5 credits (BSc), LNU
Spring 2021 (January – March) – teacher, examiner
Spring 2022 (January – March) – teacher, examiner
- Introduction to software design and software architectures
- Introduction to software architecture concepts
- Overview of architecture description techniques and architectural views
- Architectural styles and patterns software product line concepts and its architectures
- Software architecture design and evaluation

2DV611 Continuous Delivery 7.5 credits (BSc), LNU
Fall 2021 (November – January) – teacher
- Different methods of continuous software delivery in the life cycle of a software product
- Different technologies for Continuous Integration and Continuous Delivery
- Automate distribution chains for software development
- Evaluation of different distribution chains for software development
- Theories about A/B testing and Blue Green software delivery

4DV651 Project in Model-based development 10 credits (MSc), LNU
Fall 2021 (September – January) – teacher
- Advanced models and software development
- Model-based development and architecture
- Software problems, such as security, performance, and stability
- Software for different domains, and the difference in requirements
- The benefits and drawbacks of model-driven development
- Modeling languages, meta-modeling, and profiles
- Model transformations and model constraints
- Action languages, Domain specific languages, model-based testing
- Code generation from models, Tools for model-based development
- Methods to estimate time in agile projects, Methods to elicit requirements
- Methods to document software in agile projects and the relationship between documentation, models, and source code
- How to write reflection reports and post-mortem analyses projects

2DV517 Deployment Infrastructures 7.5 credits (BSc), LNU
Fall 2021 (September – January) – teacher
- Platforms for server configuration management
- Tools for creating automated configuration management
- Patterns for defining infrastructure
- Version control of configuration management
- Different techniques for monitoring operating environments

1DV510 Technical Information & Communication 7.5 credits (BSc), LNU
Fall 2019 (November – January) – teacher
Fall 2020 (November – January) – course manager, examiner
Fall 2021 (November – January) – course manager, examiner
- Professional spoken and written communication
- Academic writing and presentation and peer review
- Tools and standards for scientific publishing
- Library knowledge
- Visualisation

2DV608 Software Design 7.5 credits (BSc), LNU
Winter 2019 (January – March) – teacher
Winter 2020 (January – March) – teacher

Winter 2021 (January – March) – teacher
Winter 2022 (January – March) – teacher

- Requirement Engineering: Understanding and Elicitation of Software Requirements, Requirements Validation and Management, Modeling with UML, Requirements Modelling and Management with Tools

1DV527 The Web as an Application Platform 7.5 credits (BSc), LNU
Winter 2020 (January – March) – teacher
Winter 2021 (January – March) – teacher
Winter 2022 (January – June) – teacher (now 15 credits)

- Web Science
- The Web as an application platform
- **Web APIs (responsible)**
- Web of Things (WoT)

1DT305 Introduction to Applied Internet of Things – 7.5 credits (Open), LNU
Summer 2020 (July – August) – course manager, teacher, examiner
Summer 2021 (June – August) – teacher, examiner
Summer 2022 (June – August) – teacher, examiner

- Introduction to Internet of Things (IoT)
- Basic programming in Python and MicroPython
- Essentials of sensors and sensor data gathering
- IoT infrastructure and message protocols
- Data visualisation and database
- Building IoT projects

1DT308/1DT902 Introductory Project – 7.5 credits (BSc), LNU
Fall 2020 (November – January) – teacher, examiner
Fall 2021 (November – January) – teacher

- Introduction to a single-chip computer (hardware and software).
- Implement and execute programs in Python on a single-chip computer.
- Interact with external devices (such as sensors and networked devices).
- How to write simpler project documentation.
- Oral and written presentation of technical materials.
- Final IoT project

1DV430 Individual Software Development Project – 7.5 credits (BSc), LNU
Spring 2020 (March – June) – teacher, examiner

- Iteration planning with prioritization of requirements and risk analysis
- Requirements management in software projects
- Software testing
- Software implementation
- Presentation of projects in a written report & oral presentation at a seminar.

CKME 136 Data Analytics (Capstone Project)
Fall 2018, Students Supervised: 12

- Course Description: The Data Analytics Fast Track offers students the unique opportunity to earn a Certificate in Data Analytics, Big Data, and Predictive Analytics in an intensive, 15-week, fast-track program in the Spring/Summer term. During the Fall term, students will engage in hands-on application of analytics in a project setting. This course is intended to apply their machine learning competencies to a real-world area of interest. Working with me as a faculty supervisor, students apply what they have learned in their courses: CIND 110 Data Organization for Data Analysts, CIND 119 Introduction to Big Data, CIND 123 Data Analytics: Basic Methods, CIND 719 Big Data Analytics Tools, CMTH 642 Data Analytics: Advanced Methods.

Bachelor/Masters Theses Supervised at the Linnaeus University, Sweden
(available on http://lnu.diva-portal.org/):

2022:-

- Bugs Prioritization in Software Engineering: A Systematic Literature Review

on Techniques and Methods (2022, Bachelor)
- The "RESTful" Services: Are they "RESTful" Yet? A Follow-up Study (2022, Bachelor)
- On Using Machine Learning-based Approaches for Refactoring Identifiers: A Systematic Literature Review (2022, Bachelor)
- An Overview of Recent Product, Process, and People Metrics in Software Quality Assurance (in progress) (2022, Bachelor)
- Are Open-Source Systems Developed with Good Code Quality? An Empirical Study (2022, Bachelor)

2021:-

- Are Open-Source Systems Tested Enough? An Analysis of Open-source Unit Testing Practices (2021, Bachelor)
- Multipurpose Case-Based Reasoning System, Using Natural Language Processing (2021, Bachelor)
- Sentiment Analysis of YouTube Public Videos based on their Comments (2021, Masters)
- Requirement prioritization in Software Engineering: A Systematic Literature Review on Techniques and Methods (2021, Bachelor)
- Prioritization of Software Bugs using an SMT Solver (2021, Bachelor)
- Interactive Prioritization of Software Requirements using the Z3 SMT Solver (2021, Bachelor)
- A Systematic Literature Review on the Methodologies for Detecting REST Antipatterns in RESTful APIs (2021, Bachelor)
- Predicting Security Vulnerabilities using Software Code Metrics (2021, Bachelor)

2020:-

- Studying the Relation Between Change- and Fault-proneness: Are Change-prone Classes More Fault-prone, and Vice-versa? (2020, Bachelor)
- Do Software Code Smell Checkers Smell Themselves? A Self Reflection (2020, Bachelor)
- Interactive Execution of Non-interactive Test Framework Features: In Collaboration with Ericsson AB (2020, Bachelor)
- Studying the Relation between Linguistic and Design Quality in RESTful APIs (2020, Bachelor)
- Are APIs with Poor Design Subject to Poor Lexicon? A Google Perspective (2020, Bachelor)
- Design Abstraction of IoT REST APIs: Defining Design Patterns (2020, Bachelor)
- Evolution of Software Documentation Over Time: An Analysis of the Quality of Software Documentation (2020, Bachelor)
- Multilateration in Direct Short-Range Communications Networks: Utilising Basic Safety Messages and Received Signal Strength Ranging (2020, Bachelor)

2019:-

- NoSQL Database Selection Focused on Performance Criteria for Web-driven Applications (2019, Bachelor)
- Evaluation of User Interface to Improve Documentation within the Elderly Care System (2019, Bachelor)
- Estimating the Number of People in an Area: Using Bluetooth and Wifi Signals (2019, Bachelor)
- CRAMO: Continuously Rendered Aerial Maps with Open Data (2019, Bachelor)

Grad/Undergrad Students Co-supervised during Post-doctoral Research in Concordia University, Canada.

- Beyza Eken, Visiting PhD Student, September 2018 to December 2018, beyzaeken@itu.edu.tr, Istanbul Technical University (ITU).
- Navid Nazarzade, MSc Student,
  December 2015 to November 2016, n_nazarz@encs.concordia.ca, Concordia University
- Gaëtan François, Intern,
  June 2016 to August 2016, gaetan.francois@etu.umontpellier.fr, Polytech

Montpellier – Université de Montpellier

Grad/Undergrad Students Co-supervised during PhD Research in UQAM and UdeM, Canada.

- Mohamed Fuoni, MSc Student,
  Janyary 2014 to December 2015, mohamed.founi@gmail.com, Université du Québec à Montréal
- Charlie Faucheux, Intern from France
  June to August 2014, charlie.faucheux@etu.univ-nantes.fr, Université de Nantes
- Dubois Johann, Intern from France
  January to May 2014, johann.dubois@viacesi.fr, l'Ecole Supérieure d'informatique Cesi
- Ons Mlouki, Intern from Tunisia (Currently MSc Student at Ecole Polytechnique)
  May – September 2013, ons.mlouki@gmail.com, École Nationale des Sciences de l'Informatique
- Onfroy Guillaume, Intern from France
  January to June 2012, guillaume.onfroy@viacesi.fr, l'Ecole Supérieure d'informatique Cesi
- Joyen Benjamin, Intern from France
  January to June 2012, benjamin.joyen-conseil@viacesi.fr, l'Ecole Supérieure d'informatique Cesi
- Mathieu Nayrolles, Intern from France (Currently PhD Student at Concordia University)
  January to June 2012, mathieu.nayrolles@viacesi.fr, l'Ecole Supérieure d'informatique Cesi

Academic/ Research Awards, Funds, and Fellowships

Funds:-

- NBIF Talent Recruitment Fund of $ 55K for two years between 2022-2024 (NBIF Reference Number: TRF_2023_003; Application ID: TRF-0000000130)
- Seed funding of SEK 100K for the project titled "Digital transformation of communication between school and home" between December 2021 and June 2022. https://lnu.se/en/meet-linnaeus-university/knowledge-environments/digital-transformations/seed-projects/digital-transformation-of-communication-between-school-and-home/
- OCE TalentEdge Fellowship of $70K for two years (2016-2018) in collaboration with Ryerson University and Screaming Power Inc by Ontario Centres of Excellence (OCE), Canada.

Scholarships:-

- Graduate Research Scholarship for four years for doctoral research through NSERC Discovery Grant program at Polytechnique de Montreal, Canada (2011-2015).
- Opera Merit Award from University of Trento, Italy, 2011 (Web: unitn. it/en/incoming/21527/merit-award).
- Borse di Studio as the Study Scholarships for MSc by Opera Universitaria di Trento, Italy, 2008-2010.

Awards:-

- Best Ph.D. Thesis Award 2015 - from the Department of Computer and Software Engineering, Ecole Polytechnique de Montreal.
- Best Research Paper award at IEEE International Conference on Service Oriented Computing & Applications (SOCA) 2014, Matsue, Japan.
- Best Research Paper award (runner-up) at International Conference on Service Oriented Computing (ICSOC) 2012, China.

Published International Conference Proceedings/ Journal Articles

- **Published Patents:**
  - Sosan Beheshti, Asadalah Sahebalam, Edward W. Nidoy, **Francis Palma**: *Methods and Systems for Energy Use Normalization and Forecasting*, Patent No. US10,770,898B2
  - Sadaf Mustafiz, **Francis Palma**, Maria Toeroe and Ferhat Khendek: *A Network Service Design and Deployment Process for NFV Systems*, Publication No. US 2018/0309646 A1
- **Refereed International Journal Article(s) Published/Accepted:**

- **Francis Palma**, Tobias Olsson, Javier Gonzalez-Huerta, Anna Wingkvist: *Assessing the Linguistic Quality of APIs for Internet of Things* in The Journal of Systems & Software (JSS), 2022.
- Fatima Sabir; Yann-Gael Gueheneuc; **Francis Palma**; Naouel Moha; Ghulam Rasool; Hassan Akhtar: A Mixed-method Approach to Recommend Corrections and Correct REST Antipatterns in IEEE Transactions on Software Engineering (TSE), 2021, DOI: 10.1109/TSE.2021.3117023.
- Beyza Eken, **Francis Palma**, Ayse Basar, Ayse Tosun, *An Empirical Study on the Effect of Community Smells on Bug Prediction*, Software Quality Journal (SQJ), https://doi-org.proxy.lnu.se/10.1007/s11219-020-09538-7.
- Fatima Sabir, **Francis Palma**, Ghulam Rasool, Yann-Gaël Guéhéneuc, and Naouel Moha, *A Systematic Literature Review on the Detection of Smells and their Evolution in Object-Oriented and Service-Oriented Systems*, Journal of Software: Practice and Experience (SPE 2018), https://doi.org/10.1002/spe.2639.
- Fabio Petrillo, Philippe Merle, **Francis Palma**, Naouel Moha, Yann-Gaël Guéhéneuc, *A Lexical and Semantical Analysis on REST Cloud Computing APIs*, Communications in Computer and Information Science (CCIS 2018), Springer, DOI https://doi.org/10.1007/978-3-319-94959-8_16, Online ISBN 978-3-319-94959-8, Print ISBN 978-3-319-94958-1.
- **Francis Palma**, Naouel Moha, and Yann-Gaël Guéhéneuc, *UniDoSA: The Unified Specification and Detection of Service Antipatterns*, IEEE Transactions on Software Engineering (IEEE TSE 2018), DOI: 10.1109/TSE.2018.2819180.
- **Francis Palma**, Javier Gonzalez-Huerta, Mohamed Founi, Naouel Moha, And Guy Tremblay, Yann-Gaël Guéhéneuc, *Semantic Analysis of RESTful APIs for the Detection of Linguistic Patterns and Antipatterns*, International Journal of Cooperative Information Systems (IJCIS, 2017) DOI: https://doi.org/10.1142/S0218843017420011.
- **Francis Palma**, Mathieu Nayrolles, Naouel Moha, Yann-Gaël Guéhéneuc, Benoit Baudry, and Jean-Marc Jézéquel, *SOA Antipatterns: An Approach for their Specification and Detection*, International Journal of Cooperative Information Systems (IJCIS, 2013) DOI https://doi.org/10.1142/S0218843013410049.
- Paolo Tonella, Angelo Susi, **Francis Palma**, *Using Interactive GA for Requirements Prioritization*, Information and Software Technology (IST, 2012). http://dx.doi.org/10.1016/j.infsof.2012.07.003

- **Peer-Reviewed International Conference Papers Published:**
  - **Francis Palma**, Osama Zarraa, Ahmad Sadia: Are Developers Equally Concerned about Making their APIs RESTful and the Linguistic Quality? A Study on Google APIs, International Conference on Service Oriented Computing (ICSOC) 2021.
  - **Francis Palma**, Tamer Abdou, Ayse Bener, John Maidens, Stella Liu: *An Improvement to Test Case Failure Prediction in the Context of Test Case Prioritization*. 14th International Conference on Predictive Models and Data Analytics in Software Engineering (PROMISE) 2018, Oulu, Finland: 80-89.
  - Sadaf Mustafiz, **Francis Palma**, Maria Toeroe and Ferhat Khendek, *A Network Service Design and Deployment Process for NFV Systems*, Network Computing and Applications (NCA), 2016 IEEE 15th International Symposium on. IEEE, 2016, 10.1109/NCA.2016.7778607
  - **Francis Palma**, Javier Gonzalez-Huerta, Naouel Moha, Guy Tremblay, and Yann-Gaël Guéhéneuc: *Are RESTful APIs Well-designed? Detection of their Linguistic (Anti)Patterns*. International Conference on Service Oriented Computing (ICSOC), Goa, India (November 2015).
  - **Francis Palma**, Naouel Moha, and Yann-Gaël Guéhéneuc: *Specification and Detection of Business Process Antipatterns*. In Proceedings of the 6th International MCETECH Conference, May 12-15th, 2015, Montreal, Canada. (May 2015).
  - **Francis Palma**, Le An, Foutse Khomh, Naouel Moha, and Yann-Gaël Guéhéneuc: *Investigating the Change-proneness of Service Patterns and Antipatterns*. In Proceedings of the 7th IEEE International Conference on Service Oriented Computing & Applications (SOCA, Best Paper Award), Matsue, Japan. (November 2014).
  - **Francis Palma**, Johann Dubois, Naouel Moha, and Yann-Gaël Guéhéneuc: *Detection of REST Patterns and Antipatterns: A Heuristics-based Approach*. In Proceedings of the 12th International Conference on Service Oriented

Computing (ICSOC), Paris, France. Springer (November 2014).
- **Francis Palma**, Naouel Moha, Guy Tremblay, and Yann-Gaël Guéhéneuc: *Specification and Detection of SOA Antipatterns in Web Services*. In Proceedings of the 8th European Conference on Software Architecture (ECSA), Vienna, Austria. Springer (August 2014).
- Naouel Moha, **Francis Palma**, Mathieu Nayrolles, Benjamin Joyen Conseil, Yann-Gaël Guéhéneuc, Benoit Baudry, and Jean-Marc Jézéquel: *Specification and Detection of SOA Antipatterns.* In Proceedings of the 10th International Conference on Service Oriented Computing (ICSOC, Best Paper Award-Runner up), Shanghai, China. Springer (November 2012).
- **Francis Palma**, Angelo Susi, Paolo Tonella: *Using an SMT Solver for Interactive Requirements Prioritization*, SIGSOFT FSE, ACM, pp. 48-58 (19th ACM SIGSOFT Symposium on the Foundations of Software Engineering), Szeged, Hungary, 2011.
- Paolo Tonella, Angelo Susi, and **Francis Palma**: *Using Interactive GA for Requirements Prioritization*, In Proceedings of Second International Symposium on Search Based Software Engineering (SSBSE), Benevento, Italy, 2010.

- **Peer-Reviewed International Workshop Papers Published:**
  - Kristina Holmberg, Mattias Davidsson, Susanna Nordmark and **Francis Palma**, Digital Transformations: From Contact Books to Wrink Ways of Communication, The 1st International Symposium on Digital Transformation, February 2022.
  - Sundarakrishnan Ganesh, Tobias Ohlsson, and **Francis Palma**, *Predicting Security Vulnerabilities Using Software Code Metrics*, The 9th Swedish Workshop on Data Science (SweDS21), Växjö, Sweden, December 2021.
  - Rasmus Svensson, Adell Tatrous, **Francis Palma**: *Defining Design Patterns for IoT APIs* in the proceedings of 4th International Workshop on Engineering IoT Systems: Architectures, Services, Applications, and Platforms (IoT-ASAP) co-located with 14th European Conference on Software Architecture (ECSA) 2020.
  - **Francis Palma** and Naouel Moha, *A Study on the Taxonomy of Service Antipatterns*, in the proceedings of 2nd on Patterns Promotion and Anti-patterns Prevention (PPAP) 2015 co-located with 22nd IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER 2015), Montréal, Canada.
  - **Francis Palma**, *Specification and Detection of SOA Antipatterns*, Ph.D. Symposium, in conjunction, with 30th International Conference on Software Maintenance and Evolution (Victoria, Canada), ICSME 2014, September 28 - October 3, Victoria, Canada 2014.
  - **Francis Palma**, Naouel Moha, and Yann-Gaël Guéhéneuc, *Detection of Process Antipatterns: A BPEL Perspective*, Workshop on Methodologies for Robustness Injection into Business Processes (MRI-BP), in conjunction with the 17th IEEE International EDOC Conference (EDOC 2013), "The Enterprise Computing Conference", 9–13 September 2013, Vancouver, Canada.
  - **Francis Palma**, *Detection of SOA Antipatterns*, 8th Ph.D. Symposium (Shanghai, China), in conjunction with ICSOC 2012, (10th International Conference on Service Oriented Computing), November 12-16, Shanghai, China, 2012.
  - Mathieu Nayrolles, **Francis Palma**, Naouel Moha and Yann-Gaël Guéhéneuc, *SODA: A Tool Support for the Detection of SOA Antipatterns*, ICSOC Demonstration Track (Shanghai, China), in conjunction with ICSOC 2012, (10th International Conference on Service Oriented Computing), November 12-16, Shanghai, China, 2012.
  - **Francis Palma**, Hadi Farzin, Yann-Gaël Guéhéneuc, Naouel Moha, *Recommendation System for Design Patterns in Software Development: An DPR Overview*, Third International Workshop on Recommendation Systems for Software Engineering. In conjunction with ICSE 2012 in Zurich, Switzerland.

Technical Reports/ Theses

- **Technical Report(s):**
  - Paolo Tonella, Angelo Susi, **Francis Palma**: *Interactive Requirements Prioritization using an IGA: Complete Results* (October 2011).
  - **Francis Palma**, Angelo Susi, and Paolo Tonella: *Using an SMT Solver for Interactive Requirements Prioritization* (March 2011).
  - **Francis Palma** and Naouel Moha and Yann-Gaël Guéhéneuc, *UniDoSA: The Unified Specification and Detection of Service Antipatterns* (January 2018).

- **White Paper(s):**
  - **Francis Palma**, *Weather Normalization Case Study Comparing ENERGYSTAR's Portfolio Manager® & Screaming Power Machine Learning*, Source: http://www.screamingpower.ca/utility-monitoring-software-system/ in August 2017.
  - **Francis Palma**, Gary Michor, Greg Doucette, *On the Comparison of Greenhouse Gas (GHG) Emissions Estimation Standards – Case Study*, Screaming Power Inc., Picton, Ontario, Canada, Source: http://www.screamingpower.ca/greenhouse-gas-emissions-standards-case-study/ in November 2017.
  - **Francis Palma**: *Scream OpenData - A Permanent Home for Energy Big Data* (March 2017) Source: http://www.screamingpower.ca/wp-content/uploads/2017/04/Scream-OpenData.pdf.
- **Ph.D. Thesis:**
  - Francis Palma, *Unifying Service Oriented Technologies for the Specification and Detection of their Antipatterns*, École Polytechnique de Montréal, August 2015.
  - Awarded **Best PhD Thesis 2015** from the Department of Computer Engineering and Software Engineering.

- **Master Thesis:**
  - Francis Palma, *Using Interactive Genetic Algorithm for Requirements Prioritization,* University of Trento, December 2010. The academic year 2009-2010.
  - Published as a research paper in SSBSE (Symposium on Search-based Software Engineering) 2010, Benevento, Italy.
- **Bachelor Thesis:**
  - Abul Kalam Azad, Shabbir Ahmed, Francis Palma, "*An Efficient Method for Text Compression*", International Islamic University Chittagong, December 2005. Academic year 2001-2005.

Reviewing Profile

- COGN (Springer Cognitive Computation) 2020
- STVR (Software Testing, Verification & Reliability) 2020
- IST (Information and Software Technology) 2020
- SQJ (Software Quality Journal) 2019, 2020
- PONE (PLOS One) 2019
- ICSOC (International Conference on Service-Oriented Computing) 2019
- SEIP-SPE (Special Issue on Software Engineering in Practice: Software: Practice and Experience) 2019
- ICSE (International Conference on Software Engineering) 2018
- IEEE TSE (IEEE Transactions on Software Engineering) 2018.
- JSS (Journal of Systems and Software) 2018.
- SOCO (Springer Soft Computing) 2018.
- IJCIS (International Journal of Computational Intelligence Systems) 2016.
- SCAM (IEEE International Working Conference on Source Code Analysis and Manipulation) 2015.
- ICSME-ERA (IEEE International Conference on Software Maintenance and Evolution, Early Research Achievements) 2015.
- SIMPAT (Elsevier Journal for Simulation Modelling Practice and Theory) 2014.
- SANER-ERA (IEEE International Conference on Software Analysis, Evolution, and Reengineering) 2014.
- MCETECH (International MCETECH Conference on e-Technologies) 2014.
- IJBPIM (International Journal of Business Process Integration and Management) 2014.
- PPAP (Patterns Promotion and Anti-patterns Prevention) 2013.
- CSMR-WCRE (IEEE Conference on Software Maintenance, Reengineering and Reverse Engineering) 2013.
- IEEE TSE (IEEE Transactions on Software Engineering) 2012.
- SoSyM (Journal on Software & System Modelling) 2012.
- AUSE (Automated Software Engineering) 2012.

Professional and Academic Experiences

- **Assistant Professor**
  From September 2022 to present
  Faculty of Computer Science
  University of New Brunswick, Canada

Key research interests: Machine Learning, Internet of Things (IoT), Software Engineering (Software Quality), and Requirements Engineering.

- **Assistant Professor** (Universitetslektor)
  November 2018 to August 2022
  Department of Computer Science and Media Technology
  Faculty of Technology
  Linnaeus University, Sweden
  Key research interests: Machine Learning, Internet of Things (IoT), Software Engineering (Software Quality), Requirements Engineering.

- **Capstone Project Supervisor**
  September 2018 to December 2018
  G. Raymond Chang School of Continuing Education
  Ryerson University, Canada

- **Postdoctoral Research Fellow**
  March 2018 - October 2018
  Ryerson University
  Department of Mechanical and Industrial Engineering
  Data Science Laboratory - DSL, www.ryerson.ca/dsl/
  Key research interests: Machine Learning, Data Analytics, and Software Quality.

- **Research Scientist**
  December 2016 - September 2017
  Screaming Power Inc
  Through OCE TalentEdge Fellowship
  In collaboration with Ryerson University, Ontario, Canada
  Key research interests: Data Analytics, Energy Data, Weather Normalization, Greenhouse Gas Emission, Machine Learning

- **Research Intern**
  January 2016 - November 2016
  Ericsson Canada Inc., Montreal, Canada.

- **Postdoctoral Research Fellow**
  December 2015 - November 2016
  MAGIC Group
  Department of Electrical and Computer Engineering
  Concordia University
  Key research interests: Model-based Software Management, Network Functions Virtualization (NFV), Network Services Design, Testing of Software-as-a-Service systems

- **Research Project Collaborator**
  February 2011 - July 2011
  Fondazione Bruno Kessler (FBK), Trento, Italy
  Key Responsibilities:
  - Proposed and implemented an innovative interactive genetic algorithm in JAVA for requirements prioritization in a software development project; Performed Unit Test using JUNIT
  - Developed a fully functional GUI tool for requirements prioritization using JAVA SWING API
  - Conducted research (academic) and empirical studies through experimentations
  - Produced technical articles and reports for publication in international conferences and journals

  Key Achievements:
  - Thorough knowledge of Search Based Software Engineering and Requirements Prioritization techniques including IGA (our proposed), IAHP and NSGA-II.

- **Database Analyst and MIS Specialist**
  August 2006 - August 2008

Standard Chartered Bank, (SCB), Dhaka, Bangladesh
Key Responsibilities
- Performed data mining in the central database of SCB Bangladesh to verify data integrity, correctness, and optimization using MS Access
- Analyzed the central database of SCB Bangladesh for creating the Loan Classification Report to be submitted quarterly to the Bangladesh Central Bank
- Tracked daily, monthly, and yearly disbursement reports to evaluate the efficiency of the disbursement process
- Developed and maintained department's disbursement lodgment system in MS Access
- Created business sales MIS reports and sales summary in MS Access and Excel to highlight the business growth on the daily and monthly basis
- Performed performance and user acceptance testing for SCB's transaction systems including the ebbs, lending, and mortgage
- Handled customer complaints related to loan disbursement, loan-repayment, and account-related charges
  Provided 'Business As Usual' operational support for the processing & closure of clients' loan applications

- **Software Developer Intern**
  May 2009 - October 2009
  PerVoice SpA, Trento, Italy
  Key Responsibilities:
  - Developed software modules according to the specifications in Visual Basic and C# for video speech to text transformation from SMIL to XML, and vice versa
  - Participated in system testing and user acceptance testing for software systems in Visual Basic
  - Wrote installer for Visual Basic programs using NSIS (Nullsoft Scriptable Install System) scripts
  - Produced documentation and user manuals for software modules and artifacts

  Key Achievements:
  - Knowledge of Speech to Text translation technologies
  - Hands on experience on NSIS, SMIL, and SAMI technologies
    Knowledge of system and user acceptance testing

Technical Profile

- Languages: Java, Python, C/C++/C#, Visual Basic .Net
- Web Technologies: PHP, HTML/CSS, JavaScript, SOAP Web services, RESTful services
- Modelling Languages: BPMN, BPEL4WS, and UML, ADONIS, Si*
- Networking Concepts: TCP/IP, FTP, DNS Server, DHCP, OSI Protocol, IPv4/IPv6
- Database: MySQL Server, MS Access, FoxPro, NoSQL databases like Cassandra
- Infrastructure as Code (IaC) tools: Terraform, Ansible
- Online Teaching Platforms/Tools: Zoom, Slack, Discord, Melon App, StreamYard

Professional Memberships

- Member, Association for Computing Machinery (ACM Membership)
- Member, Institute of Electrical and Electronics Engineers (IEEE Membership)