Potential Faculty Supervisors from the MSc and PhD Programs in Computer Science

Prof. Abdolreza Abhari

BASc, MASc, PhD, Carleton
ENG-264
aabhari@ryerson.ca
http://www.scs.ryerson.ca/~aabhari
x 7408

Distributed Systems and Multimedia Processing (DSMP) Lab:
http://www.scs.ryerson.ca/~aabhari/DSMP.pdf

Research Interests

My current research interests include:
- Web/Internet Technology, Performance Measurement, Modeling and Caching
- Parallel and Distributed Systems
- Web Multimedia Systems
- Computer Networks
- Database Systems
- Object Oriented Languages

Prof. Cherie Ding

BSc, MEng, PhD
ENG-258
cding@ryerson.ca
http://www.scs.ryerson.ca/~cding
x 6965

Research Interests

My major research interest is related to web search engines, on
- how we can improve a user's online searching experiences,
- how we can provide more personalized results, and
- other related topics such as how to optimize a web site for a better ranking in the search engine.

Currently, I am also very interested in service engineering (or service oriented architecture - SOA, or service oriented computing - SOC).

Prof. Kosta Derpanis

BSc (Tor), MSc (York), PhD (York)
ENG-244
kosta@scs.ryerson.ca
http://www.scs.ryerson.ca/~kosta
x 3205

Research Interests

How do we represent the visual dynamic world? My research focus here is on understanding representational aspects of video that make it possible to recover salient information, with considerations made to being flexible to the wide range of temporal image variation encountered in the world.

Prof. Alexander Ferworn

CD, BTech, Ryerson, MSc, Guelph, PhD, Wat.
ENG-283
aferworn@ryerson.ca
http://www.scs.ryerson.ca/~aferworn
x 6968
Network-Centric Applied Research (N-CART) Lab:
http://ncart.scs.ryerson.ca

Research Interests

My current research interests include:
- Intelligent Agents
     - Relocating code, Autonomy
- Mobile Robotic Systems including topics like
     - Telepresence, computer mediated interaction, robotic mechanisms, Internet Appliances, soft computing,
- Computational Public including topics like: Disaster Management Technology, Canine Search, Rescue/Response Robotics, USAR and CBRNe topics
- Many others--just come and talk to me.

working on is how we can automatically extract non-functional (quality of service) requirements to improve business agility.

Prof. Eric Harley
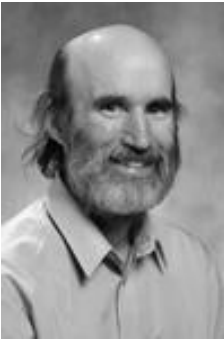
BSc, MSc, York (Can.), PhD, Tor.
ENG-282
eharley@ryerson.ca
http://www.scs.ryerson.ca/~eharley
x 4874

Research Interests

- graph algorithms: e.g., algorithms for listing maximal cliques, comparisons, improvements and parallel implementations
- audio user interface
- computer aided programming
- learning language by frames and examples

Prof. David Mason

BSc, Acad., MSc, Tor., PhD,Wat.
ENG-260
dmason@ryerson.ca
http://www.scs.ryerson.ca/~dmason
x 7061

Research Interests

Everything to do with

- Programming Language research: programming language design/ usability/ comprehensibility, compilation, correctness, object-oriented technologies.
- Program analysis including probabilistic program execution.
- Software Engineering including program verification, software reliability, agile and open-source development methodologies.
- Web 2.0 community-building technologies including wikis, content management systems, and light- and medium-weight clients.

Prof. Tim McInerney

BASc, MSc, PhD, Tor.
ENG-262
tmcinern@ryerson.ca
http://www.scs.ryerson.ca/~tmcinern
x 7245

Research Interests

- Interactive Visual Analysis
- graphics,
- human computer interaction,
- software tools, techniques and systems for data visualization.
- fast, simple, intuitive, efficient /interactive/ visual exploration,
- measurement, and analysis of medical image data and other data (2D or 3D).
- 3D object extraction and modeling,
- visual comparison of two objects,
- object feature emphasis, manipulation in 3D, measurement, annotation, tracking changes in objects, object interrelationship analysis,
- moving around in volume images, and
- sharing and recording of multimedia diagnostic reports and surgical plans.
- integration of user collaboration mechanisms

Prof. Andiy Miranskyy

MSc. (Western), Phd (Western)
ENG-274
avm@scs.ryerson.ca
www.scs.ryerson.ca/~avm
x7208

Research Interests

My main research interest lies in the area of quantifying and mitigating risks (in the broadest sense) associated with the Software Engineering process. Examples of risks are numerous:

- Related to very large databases for Big Data been tested improperly, resulting in defect escapes and unplanned outages;
- Tied to non-scalable algorithms for which it is impossible to determine root cause of system failure fast enough to preclude prolonged outages and customer dissatisfaction;
- Connected with requirements creeping in late in the development cycle, overrunning original budget and schedule;
- Linked to spikes in the number of defects rediscovered by clients, overloading support and maintenance personnel.

My current research activities involve three inter-related Software Engineering disciplines: Quality Assurance, Green (Energy Efficient) Software, and Requirements Engineering.

Prof. Marcus Santos

BSc, MSc, PhD, Uberlandia Brazil
ENG-263
m3santos@ryerson.ca
http://www.scs.ryerson.ca/~m3santos
x 7062

Research Interests

- logic-based knowledge representation and reasoning: I intend to use advances in logic and knowledge engineering to design and develop techniques for video sequence understanding, with an emphasis on real application domains such as robotics, video surveillance, and health.
- evolutionary computation (EC): I am interested in genetic and gene-expression programming approaches to EC in general, and the study of dynamic tuning of run parameters in parallel EC architectures.

Prof. Ali Miri

BSc, MSc, Tor., PhD, Wat.
ENG-280
samiri@ryerson.ca
http://www.scs.ryerson.ca/~samiri
x 7060

Research Interests

- Information and Coding Theory
- Cryptography
- Network and Computer Security
- Systems and Control Theory
- Applied Number Theory

Prof. Jelena Misic

PhD, Belgrade
ENG-261
jmisic@ryerson.ca
http://www.scs.ryerson.ca/~jmisic
x 7404

Research Interests

- WLANs, WPANs, wireless sensor networks, wireless mesh networks, ad hoc networks
- Dynamic spectrum allocation
- Applications of wireless sensor networks in healthcare and environmental monitoring.
- Network security
- Performance evaluation

Prof. Vojislav Misic

PhD, Belgrade
ENG-279
vmisic@ryerson.ca
http://www.scs.ryerson.ca/~vmisic
x 6697

Research Interests

- Performance of wireless networks, including personal area networks, cognitive communication networks, and other similar networks
- Software engineering, including software architecture, service-oriented software systems, design quality, and (in particular) the impact of socio-psychological factors on software development process.

Prof. Alireza Sadeghian

MASc., PhD, Tor.
ENG-286
asadeghi@ryerson.ca
http://www.scs.ryerson.ca/~asadeghi
x 6961

Research Interests

Our research objective is to undertake theoretical and applied research in Computational Intelligence, and to understand the nature of intelligence and to engineer systems that exhibit intelligence. To this end, advances in the complementary fields of neural networks, support vector machines and adaptive neuro-fuzzy systems are utilized to achieve smart operation and to improve the performance of intelligent systems. Our research mission is, therefore, to develop methods, tools, and technology for the design and the implementation of learning systems, which mimic the learning process of humans and can clearly explain their decision making behavior, and then apply them to real world problems.

Prof. Mikhail Soutchanski

BSc, Moscow Physico-Technical Institute, PhD, Tor.
ENG-275
mes@scs.ryerson.ca
http://www.scs.ryerson.ca/~mes
x 7954

Research Interests

- Artificial Intelligence: in particular I'm interested in Knowledge
- Representation and Reasoning.
- Logic-based high-level programming languages with applications to design of complex controllers for software agents and mobile robots. A
- Prolog interface to the Sony's AIBO robots.
- Reasoning about actions in space and time;
- A logical formalization of common sense reasoning for the purposes of high-level robot control.
- Markov Decision Processes with constraints.
- Reinforcement Learning
- Execution Monitoring of high-level programs.
- Semantic Web Services.

Prof. Denise Woit

BMath, MMath, Wat., PhD, Qu
ENG-277
dwoit@ryerson.ca
http://www.scs.ryerson.ca/~dwoit
x 7063

Research Interests

- software reliability,
- system reliability,
- software testing,
- software analysis,
- verification and validation (V&V),
- software engineering,
- eXtreme Programming,
- sociological issues in software engineering,
- project management,
- computer science education

Prof. Isaac Woungang
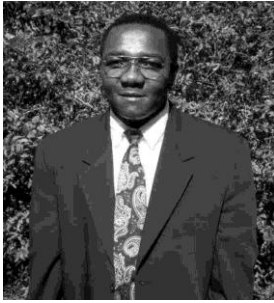
BASc, MASc, PhD
ENG-282
woungang@scs.ryerson.ca
http://www.scs.ryerson.ca/~iwoungan
x 6972

Distributed Applications and Broadband NEtworks Laboratory
(DABNEL) Research Group:
http://www.scs.ryerson.ca/~iwoungan/Labfacilities.html

Research Interests

- Telecommunication Networks:
    - Algorithm Design and Engineering for Telecommunication Networks
    - Fault-Tolerance, Survivability, and Reliability in Networks
    - Routing, Traffic Engineering, Quality-of-Service in Networks
    - Computational Intelligence Applications in Telecommunications
    - Opportunistic networks
    - Mobile and Ad hoc Networks
- Control and System Design
    - Modeling and Designing of Autonomous Systems
    - Security of Autonomous Systems
    - QoS in Mobile Systems
- Network security
    - Intrusion Detection Systems
    - Security and Privacy in Mobile Systems and Ad hoc Networks
    - Network Forensics Systems
- Web Applications
    - Performance Modeling and Evaluation
    - Content-Based Image Retrieval and Web caching
- Localization & E-Learning
    - E-learning standalone systems
    - Software Localization
- Other Research Interests
    - Design and Performance of Business Information Systems
    - Category Theory and Its Network Applications

Faculty From the Department of Mathematics

Prof. Peter Danziger

BSc, Warw., MSc Lond., PhD, Tor.
ENG-223
danziger@ryerson.ca
www.scs.ryerson.ca/~danziger
x 7413

Research Interests

- Discrete Mathematics.
- Design Theory.
- Coding Theory.
- Graph Theory.
- Cryptography.
- Software Testing.
- Complexity Theory.
- Analysis of Algorithms.

Prof. Dejan Delic

BMath, MMath, U of Novi Sad, Yugoslavia, PhD, Wat.
ENG-228
ddelic@ryerson.ca
http://www.math.ryerson.ca/~ddelic
x 6971

Research Interests

- Model theory
- General algebra
- Graph theory

Prof. Marcos Escobar

Ph.D., University of Toronto, Mathematics
ENG-213
escobar@ryerson.ca
http://www.math.ryerson.ca/~escobar
x 4867

Research Interests

- Multidimensional Stochastic Processes.
- Time Series Analysis.
- Dependence Structures.
- Financial Mathematics.
- Biostatistics.

Prof. Sebastian Ferrando, Chair of Mathematics

Ph.D. Tor.
ENG-219
ferrando@ryerson.ca
http://www.math.ryerson.ca/~ferrando
x 4912

Research Interests

- Ergodic Theory.
- Signal Analysis, Wavelets.
- Financial Mathematics.

Prof. Lawrence Kolasa

ENG-225
lkolasa@ryerson.ca
http://www.math.ryerson.ca/~lkolasa
x 4871

Research Interests

- Applied Harmonic Analysis to image and signal processing

Prof. Kunquan Lan

Ph.D, Glasgow UK
ENG-229
klan@ryerson.ca
http://www.math.ryerson.ca/~klan/
x 6962

Research Interests

- Differential Equations, and
- Nonlinear Functional Analysis.

Prof. Jean-Paul Pascal

ENG-227
jpascal@ryerson.ca
x 4872

Research Interests

- Fluid Mechanics and Computational Fluid Mechanics:
  - Hydrodynamic stability.
  - Non-Newtonian flows.
  - Flow through porous media.
  - Gravity driven flows with environmental and industrial applications.
- Numerical methods for hyperbolic nonlinear conservation laws.

Prof. Katrin Rohlf

ENG-240
krohlf@ryerson.ca
http://www.math.ryerson.ca/~krohlf
x 6976

Research Interests

- Biofluid dynamics
- Non-Newtonian fluid flow
- Stochastic processes
- Reaction-diffusion equations
- Aggregating systems
- Chemical reactions
- Modeling and simulations
- Applications to blood flow, cardiac arrhythmias, chemically reacting media, and industrial fluids.