

## Faculty From the Department of Computer Science

### Prof. Alireza Sadeghian, Chair of Computer Science



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. 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. Mark Fiala



BSc, MAsc, PhD, Alta.

ENG-274

[mfiala@ryerson.ca](mailto:mfiala@ryerson.ca)

<http://www.scs.ryerson.ca/~fiala> x

7208

Network-Centric Applied Research (N-CART) Lab:

<http://ncart.scs.ryerson.ca>

### **Research Interests**

- Computer Vision
- augmented reality (AR)
- robotics in general,

## Prof. Alexander Ferworn, Graduate Program Director



CD, BTech, Ryerson, MSc, Guelph, PhD, Wat.

ENG-283

[aferworn@ryerson.ca](mailto: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,
- Computer Science in Urban Search and Rescue and Public Safety including topics like: Disaster Management Technology, Canine Search, Rescue Robotics
- Many others--just come and talk to me.

## Prof. Cherie Ding



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

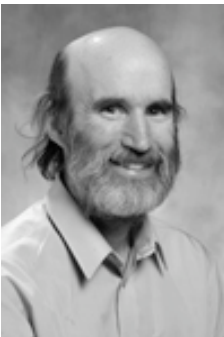
### ***Research Interests***

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) . One of the projects I am 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. 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 Mistic**



PhD, Belgrade  
ENG-261  
jmistic@ryerson.ca  
<http://www.scs.ryerson.ca/~jmistic>  
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 Mistic**



PhD, Belgrade  
ENG-279  
vmistic@ryerson.ca  
<http://www.scs.ryerson.ca/~vmistic>  
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. 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

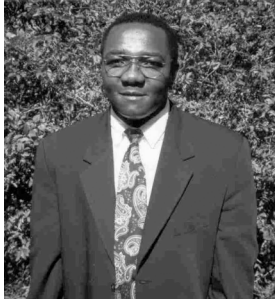


BMath, MMath, Wat., PhD, Qu  
ENG-277  
dwoit@ryerson.ca  
<http://www.scs.ryerson.ca/~dwoit>  
x 7063

### **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](http://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.