Getting Through Graduate School
...... Still Standing

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Talking about survival ...

You do not have to be a “star” to survive graduate school, but you need to be well informed. — anonymous

- Who and what are available to help you?
- MIP: your supervisor
- Some simple pointers about research
- The five Golden Rules?
Who and what are available to you?

The greatest achievement of human spirit is to live up to one's opportunities and make the most of one's resources. — Marquis De Vauvenargues

- Financial support
- Senior supervisor and supervisory committee
- Our vast research and teaching expertise
- Your fellow students
- Computing, library, and on-line resources
Financial support: external scholarships

- NSERC scholarships (www.nserc.ca)
  - Canada Graduate Scholarships (17K/yr or $35K/yr)
  - NSERC Postgraduate Scholarships (17K/yr or 21K/yr)
  - Industrial Postgraduate Scholarships (15K+6K per year)
  - Only applicable to Canadian citizens and permanent residents
  - Maximum 4 years of NSERC support; highly competitive

- Others support available from MITACS, CIHR, MSFHR, etc.
Financial support: internal scholarships

- CS, FAS, and SFU graduate fellowships ($6,000 per semester)
- FAS ($350 + $350) and CS travel funds
- President’s Ph.D. research stipends ($6,000; one-time only)
- For more information about SFU internal awards, check out [http://www.sfu.ca/dean-gradstudies/internalawards.htm](http://www.sfu.ca/dean-gradstudies/internalawards.htm)
- Award database, including all private scholarships, can be found at [http://cgi.sfu.ca/~dgsit/cgi-bin/Award1.php](http://cgi.sfu.ca/~dgsit/cgi-bin/Award1.php)
Graduate Fellowships (GFs)

- CS GF and FAS GF: $3,000 + $3,000 from supervisor; need your supervisor’s recommendations
- SFU GF: $6,000 from the university
- Typically require 3.5+ CGPA; in exceptional cases, other measures, e.g., research publications, can outweigh GPA requirements
- All applicants will be ranked by the graduate committee
- Application deadline: April 15
- 2004/2005 allocations: 50 CS GFs, 10 FAS GFs, and 40 SFU GFs
People around you

Dissertations are not finished; they are abandoned — Fred Brooks

- 45+ research faculty (fifth largest among CS depts. in Canada), 11 lecturers, and still growing
- 700+ undergraduate majors
- About 185 fellow graduate students

“The challenging computer science program at SFU will give you the grounding required to achieve excellence.” — Saha K, Alumni
Research labs and groups

- Algorithms & Optimization
- Autonomy Lab
- Computational Logic Lab
- Lab for Computational Biology
- Computational Vision Lab
- Database and Data Mining Lab
- Graphics, Usability, & Visualization (GrUVi) Lab
- Intelligent Systems Lab
- Logic & Functional Programming
- Medical Computing
- Medical Image Analysis Lab
- Natural Language Lab
- Network Modeling Lab
- Parallel & Distributed Computing
- Programming Languages
- Software Technology Lab
- Vision & Media Lab
# Research hires in the last 3 years

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution 1</th>
<th>Institution 2</th>
<th>Position</th>
<th>Field</th>
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</thead>
<tbody>
<tr>
<td>Martin Ester</td>
<td>ETH (Ph.D., ’90)</td>
<td></td>
<td>Associate Prof.</td>
<td>Databases and data mining</td>
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<tr>
<td>Uwe Glässer</td>
<td>HNI, Paderborn (Ph.D., ’92)</td>
<td></td>
<td>Associate Prof.</td>
<td>Software engineering</td>
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<tr>
<td>Cenk Sahinalp*</td>
<td>Maryland (Ph.D., ’97)</td>
<td></td>
<td>Associate Prof.</td>
<td>Algorithms and computational genomics</td>
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<tr>
<td>Andrei Bulatov</td>
<td>Ural State Univ. (Ph.D., ’95)</td>
<td></td>
<td>Assistant Prof.</td>
<td>Constrain satisfaction; complexity</td>
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<tr>
<td>Funda Ergun</td>
<td>Cornell (Ph.D., ’97)</td>
<td></td>
<td>Assistant Prof.</td>
<td>Algorithms and networking</td>
</tr>
<tr>
<td>Ghassan Hamarneh</td>
<td>Chalmers Univ. (Ph.D., ’01)</td>
<td></td>
<td>Assistant Prof.</td>
<td>Medical image analysis</td>
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<tr>
<td>Mohamed Hefeeda</td>
<td>Purdue (Ph.D., ’04)</td>
<td></td>
<td>Assistant Prof.</td>
<td>Networking and distributed systems</td>
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<td>Valentine Kabanets</td>
<td>Toronto (Ph.D., ’00)</td>
<td></td>
<td>Assistant Prof.</td>
<td>Computational complexity</td>
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<tr>
<td>Ted Kirkpatrick</td>
<td>Oregon (Ph.D., ’00)</td>
<td></td>
<td>Assistant Prof.</td>
<td>Haptics and HCI</td>
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<td>Jiangchuan Liu</td>
<td>HKUST (Ph.D., ’03)</td>
<td></td>
<td>Assistant Prof.</td>
<td>Networking and communications</td>
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<tr>
<td>Greg Mori</td>
<td>Berkeley (Ph.D., ’04)</td>
<td></td>
<td>Assistant Prof.</td>
<td>Computer vision</td>
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<td>Anoop Sarkar</td>
<td>Pennsylvania (Ph.D., ’02)</td>
<td></td>
<td>Assistant Prof.</td>
<td>Natural language processing</td>
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<td>Tamara Smyth</td>
<td>Stanford (Ph.D., ’04)</td>
<td></td>
<td>Assistant Prof.</td>
<td>Computer-based music theory</td>
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<td>Eugenia Ternovska</td>
<td>Toronto (Ph.D., ’01)</td>
<td></td>
<td>Assistant Prof.</td>
<td>Computational logic</td>
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<tr>
<td>Richard Vaughan</td>
<td>Oxford (D. Phil., ’98)</td>
<td></td>
<td>Assistant Prof.</td>
<td>Robotics and autonomous systems</td>
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<tr>
<td>Jian Pei</td>
<td>SFU (Ph.D., ’02)</td>
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<td>Assistant Prof.</td>
<td>Databases and data mining</td>
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<tr>
<td>Daniel Weiskopf</td>
<td>Tuebingen (Ph.D., ’01)</td>
<td></td>
<td>Assistant Prof.</td>
<td>Scientific visualization</td>
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<td>Kay Weise</td>
<td>Regina (Ph.D., ’99)</td>
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<td>Assistant Prof.</td>
<td>Algorithms and bio-informatics</td>
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<tr>
<td>Richard Zhang</td>
<td>Toronto (Ph.D. ’03)</td>
<td></td>
<td>Assistant Prof.</td>
<td>Computer graphics</td>
</tr>
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How to become informed?

You can always tell when a man's well informed. His views are pretty much like your own. — H. Jackson Brown Jr.

- Research topics seminar (CMPT 891)
- Web pages of our faculty and research labs
- Your emails, e.g., scholarship announcements and deadlines
- SFU library, on-line digital libraries, google, citeseers, newsgroups, etc.
- *But why not just talk to a faculty over coffee?
MIP: your supervisors

- Senior supervisor
  - Potential supervisor assigned as you start
  - Senior supervisor decided upon during first-year

- Supervisory committee
  - Senior supervisor + at least one CS faculty + others
  - Typically formed within first year
What to look for in a supervisor?

- Available
- “Rich”
- Smart
- Honest and trustworthy
- Share your interests
- Good personal and communication skills

Available, rich, and smart

- *Available
  - Has time and be willing to meet you regularly (e.g., 1 hr/wk)
- “Rich”
  - Has money and be willing to support you adequately
- Smart
  - Has good technical skills, e.g., can help you improve and provide constructive criticism of your work, etc.
  - His/her research well-respected in the field
Honest and trustworthy ...

*Honest and trustworthy
  - Give you sufficient credit for works you have done
  - Speak well of you and your abilities
  - Tell you when you work is or is not good enough

Interested in the topics you are fond of

Good personal and communication skills
  - Nice, patient, and always encouraging, so you can talk freely and easily about your ideas
Getting the most out of your supervisor?

- Meet regularly — at least once every other week
- *Prepare for your meetings and email him/her a brief summary after every meeting
- Keep good records of major milestones
- *Show your results to your supervisor as soon as possible
- *Don’t be afraid to disagree or ask the “silly” questions
- Take the initiative — don’t always wait for orders
- Be productive 😊

Simple pointers about research

- Be organized
  - Make a journal of your research ideas
  - Set deadlines for yourself
  - Always know where you are
  - Keep your priorities straight and don’t go off on a tangent

- Make realistic goals
  - Conquer one problem at a time
  - Publish your work and don’t be afraid to say “future work”
Simple pointers about research

* Do not worry about your difficulties in mathematics, I assure you that mine are greater. — Albert Einstein

- Confront your fears and weaknesses
  - Find every chance possible to strengthen your math
  - Talk about your research in public whenever you can
  - Practice writing up your work early
- *Balance reading, thinking, writing, and hacking
- Confidence in yourself, in your supervisor, and in your chosen topic — perseverance more likely to pay off than flip-flopping

The five Golden Rules?

1. Be self-motivated
2. Find the right supervisor
3. Make the most out of all available resources
4. Be organized, realistic, and confident
5. Have a full life, e.g., exercise regularly — you need the endurance when you write up your thesis!
Don’t play too hard!
Want to know more?

http://www.cs.sfu.ca/gradpgm/
http://www-smi.stanford.edu/people/pratt/smi/advice.html
http://www.cs.unc.edu/~azuma/hitch4.html