Ron Estrin

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EDUCATION

Ph.D Candidate, Computational and Mathematical Engineering **2014 - 2019**
ICME, Stanford University, Stanford, CA

Bachelor of Science with Distinction **2010 - 2014**
Combined Honours Math and Computer Science
University of British Columbia, Vancouver, BC

EXPERIENCE

Google, Mountain View, CA **Summer 2017**
PhD Research Intern, LASER Team.

- Studied new approach to low-rank matrix completion with applications to recommendation systems (such as movie or music recommendations) and word embeddings.
- Implemented high performance solver for alternating least-squares in python using numpy and scipy for low-rank matrix completion.
- Demonstrated cases where proposed variant outperforms traditional low-rank matrix completion approach.

University of British Columbia, CS Department, Vancouver, BC **Summer 2016**
Research Assistant

- Developed a family of iterative solvers for (possibly non-symmetric) saddle point systems arising from engineering problems under the supervision of Dr. Chen Greif.
- Methods in this new family are often competitive with existing approaches.
- Paper submitted to the SIAM Journal on Scientific Computing.

Microsoft, Redmond, WA **Summer 2015**
Software Development Engineering Intern, Elastic Scale Team

- Implemented feature for distributed database transactions in the cloud for SQL Server.
- Project was completed from scratch, with design document, testing and implementation accomplished within the internship.
- Details to follow when feature is in public preview.

Microsoft, Redmond, WA **Summer 2014**
Software Development Engineering Intern, Elastic Scale Team

- Designed time synchronization scheme for Azure datacenters across the world.
- Implemented prototype of scheme in C# as Azure Cloud Service.
- Prototype achieved millisecond synchronization within datacenters, sub-second synchronization across datacenters.

Google, Waterloo, ON **Summer 2013**
Google Summer Software Engineering Intern

- Developer for mobile and iOS Gmail, client and server-side, working in Java, Javascript.
- Responsible for writing design documents, implementation and testing of projects.
- Intern projects resulted in first network responses to return 75% faster than before.

Mathematics Department, UBC **Summer 2012**
NSERC USRA Research Assistant

- Worked with Dr. Richard Anstee on problems in Extremal Hypergraph Theory.
- Discovered and proved theorems as well as other results recorded in a booklet of notes.

Evident Point Software, Richmond, BC **Summer 2011**
Quality Assurance Tester

- Tested various software projects, wrote bug reports and demonstrated working products to clients.
- Wrote automated tests in Ruby.

SKILLS

Languages & Software: Julia, Python, MATLAB, C/C++, C#, Java, LaTeX

PUBLICATIONS

R. Estrin and C. Greif. On nonsingular saddle-point systems with a maximally rank-deficient leading block. *SIAM J. Matrix Anal. Appl.*, 36(2):367–384, 2015.

R. Estrin and C. Greif. Towards an optimal condition number of certain augmented Lagrangian-type saddle-point matrices. *Numer. Linear Algebra Appl.*, 23(4):693–705, 2016.

R. Estrin, D. Orban, and M. A. Saunders. LSLQ: An iterative method for linear least-squares with an error minimization property. *SIAM J. Matrix Anal. Appl.*, 2017, accepted.

PRESENTATIONS

ICME Student Seminar. Stanford University. **Oct 2016**

SIAM Annual Meeting Poster Session. Boston, MA. **July 2016**

SIAM Computational Science and Engineering. Atlanta, GA. **Feb 2017**.

ACADEMIC HONOURS

Gene Golub Fellowship Award **2014**

- Awarded based on academic excellence and research potential for incoming ICME students

Governor General's Academic Silver Medal **2014**

- Highest academic standing in Science Department among graduating class

Dr. R. D. James Medal in Mathematics **2014**

- Awarded to student in graduating class whose record and promise in Mathematics are considered by the Math dept. to be the most outstanding

CRA Outstanding Undergraduate Award Honourable Mention **2014**

ADDITIONAL ACTIVITIES

ICME Computational Consulting Leader **2015-2016**

- C2 is a free consulting service offered by ICME students for the Stanford academic community for any help they may need with their computational, numerical or mathematical problems.

UBC Math Circle Co-Leader **2012 - 2014**

- One of two leaders who coordinated group of volunteers for program where high school students come in for UBC faculty lectures and problem sets designed by the volunteers.

Sports

- Tennis. Competed in local tournaments and instructed group lessons.
- Competed for Stanford's Taekwondo team. Won the silver medal at the 40th and 42nd National Collegiate Taekwondo Championships in the red belt, welter weight division.