Sam Castle

Computer Science Researcher

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Summary

My research focuses on how technology can improve the lives of underserved populations in low-income regions. This involves work in in Computer Security and Privacy, HCI, Systems, Networks, and Data Analytics.

Education

2015 — **PhD in Computer Science**, *University of Washington*, Seattle, WA.
ICTD Lab: Information and Communication Technologies for Development

2010 – 2015 — **BS in Mathematics**, *Davidson College*, Davidson, NC.
Summa Cum Laude, Overall GPA: 4.00 out of 4.00
Minor in Astrophysics

Publications

[1] Sam Castle, Fahad Pervaiz, Galen Weld, Franziska Roesner, and Richard Anderson. "Let's Talk Money: Evaluating the Security Challenges of Mobile Money in the Developing World". In: ACM Symposium on Computing for Development. DEV '16. Nairobi, Kenya: ACM, Nov. 2016.

Research Projects

Current

2016 — **Branchless Banking Android Applications**.
We are developing a prototype Android application for branchless banking with a focus on security and privacy in the developing world. We focus on server [mis]configurations and propose an OpenSSL wrapper library. Future work will survey the developers who are working on deployed branchless banking applications.

2016 — **Digital Financial Services: Literature Review**.
We are conducting a survey of research in financial services for the unbanked published in mainstream Computer Science literature. The white paper will soon be available at http://ictd.cs.washington.edu.

Work Experience

Teaching

Fall 2015 — **CSE 311: Foundations of Computing I**, *University of Washington*, Seattle, WA.
- Teaching Assistant under James Lee and Shayan Oveis Gharan.
- Taught a weekly section of 30 students.
- Led weekly office hour instruction.

Internships

Sp 2015 — **NSF REU Student**, *Cerro Tololo Inter-American Observatory*, La Serena, Chile.
Developed Automated image processing tools in Python to study the shell elliptical galaxy NGC 3923.

2013
2014

Modeling & Simulation Intern, *National Geospatial-Intelligence Agency (NGA)*, Department of Defense, USA.

Summers 2013 and 2014.

– Worked with technical subject matter and tools in the application of information technology for modeling and simulation.

Fall 2012

Meteor Physics Intern, *NASA Marshall Space Flight Center*, Huntsville, AL.

Researched the particle size distribution of fragmenting meteors and assisted the NASA Meteoroid Environment Office.

Technical Skills

Development

Languages	Java, C++, Python, Perl, MATLAB, Mathematica, Android, Shell/Bash, GNU Make	Web	HTML, CSS, JavaScript, Bootstrap, PHP
Methods	Object-Oriented Programming, Machine Learning, Formal Verification	Databases	SQL, MySQL

Systems and Network Administration

Operating Systems	GNU/Linux (Debian, Ubuntu, Fedora), MacOS X, Windows	Security	SSL/TLS, PGP, OTR, OpenSSL, Tor
Web	Apache	Virtualization	VNC, Wine

Office and tools

Office	OpenOffice/LibreOffice, Microsoft Office, Gimp	Editing	LaTeX, Vim, Emacs, Eclipse IDE
Management	Git, GitHub	Tools	Gnuplot, Wine

Foreign Languages

English	Native	*Native speaker*
German	Minimum Professional Proficiency	*5 years in school, foreign exchange program*
Spanish	Elementary Proficiency	*Studied abroad in Chile, occasional practice*

Personal

Memberships	Phi Beta Kappa, Sigma Pi Sigma, Omicron Delta Kappa
Offices	Defense Advisor to Davidson College Honor Council (2013-2014), President of Davidson Outdoors (2013)
Hobbies	Hiking, cycling, soccer, reading