Danielle “Dasha” Pruss

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Education

BS, Computer Science, *University of Utah* *2016*
Dean’s List, *2011-2015*

Research Experience

Research Assistant, *University of Utah* *2015 – present*

Working under Dr. Miriah Meyer in the Vis Design Lab of the Scientific Computing and Imaging Institute. Visualizing the retinal cell connectome, in collaboration with the Marc Laboratory of the Moran Eye Center. Research funding from the Scientific Computing and Imaging Institute.

Research Intern, *Harvard-MIT Health Sciences and Technology* *2014*

Worked under Dr. Alexander Gimelbrant of the Dana Farber Cancer Institute, an affiliate of Harvard Medical School. Performed bioinformatic analysis of gene expression variation in genes subject to monoallelic expression. Research funding from Harvard-MIT Health Sciences and Technology Summer Institute in Bioinformatics and Integrative Genomics.

Research Technician, *University of Utah* *2012 – 2013*

Worked under Dr. Michael Kay of the Department of Biochemistry. Synthesized and purified peptides for Ebola virus inhibition. Developed bioinformatics Perl scripts for mutant analysis of deep sequencing data. Research funding from Undergraduate Research Opportunities Program and the Biochemistry Department of the University of Utah.

Internships

Software Engineering Intern, *Qualcomm* *2015*

Worked on the QaFAST team (Qualcomm Application Framework for Automated Suite of Tests). Developed Android OS test automation frameworks for product level functional, performance, and stability testing. Revamped the Android test automation application user interface.

Clinical Variant Research Intern, *Myriad Genetics* *2010 – 2011*

Performed genetic and pedigree analysis of deleterious mutations and variants of uncertain significance in tumor suppressor genes BRCA 1/2, associated with increased risk of breast and ovarian cancer.

Teaching Assisting

Leading weekly lab sessions, holding office hours, and grading.

CS 2420, "Data Structures and Algorithms" *2015*
Miriah Meyer, 1 semester

CS 1410, "Object Oriented Programming," Embedded Systems Version *2014*
Peter Jensen, 1 semester

CS 1410, "Object Oriented Programming" *2013 – 2014*
Erin Parker, 2 semesters

Publications

"Risk alleles in genes with monoallelic expression are enriched among gain-of-function variants and depleted among loss-of-function variants in neuro-developmental disorders." Savova V., Pruss D., Gimelbrant A., Weiss L. *in revision*

"Statistical Soft Mutagenesis, a Tool for Peptide Phage Display Affinity Maturation as Applied to D-peptide Inhibitors of Ebolavirus Entry" *in progress*
Clinton T., Szabo-Fresnais N., Apple S., Pruss D., Pandya M., Whitby F., McKinnon R., Hill C., Welch B., Eckert D., Kay M.

Presentations

"Expression Variation in Monoallelic Genes" *2014*

2014 Harvard-MIT Health Sciences and Technology Summer Scholars Program in Bioinformatics and Integrative Genomics, Harvard Medical School

Awards

scholarships

Hyde Merrill Endowed Scholarship *2015*
University of Utah, College of Engineering

School of Computing Women's Scholarship *2015*
University of Utah, School of Computing

Grace Murray Hopper Memorial Scholarship *2015*
University of Utah, School of Computing

Honors at Entrance Scholarship *2011 – 2015*
University of Utah, Honors College

university honors

Dean's List *2011 – 2015*
University of Utah

conference grants

2015 Grace Hopper Scholar *(declined)* *2015*
Funding from the Anita Borg Institute

2014 Grace Hopper Celebration of Women in Computing Scholarship *2014*
Funding from the University of Utah, School of Computing

Qualcomm Women's Collegiate Conference Scholarship *2014*
Funding from the University of Utah, School of Computing

2013 Rocky Mountain Conference for Undergraduate Women in Physics *2013*
Funding from the University of Utah, College of Science

research funding

University of Utah, Scientific Computing and Imaging Institute *2015*

Harvard-MIT Health Sciences and Technology, Summer Institute in Bioinformatics and Integrative Genomics *2014*

University of Utah, Biochemistry Department *2012 – 2013*

Undergraduate Research Opportunities Program (UROP) *2012*

other

Stanford University Summer Institute in Microbiology and Biotechnology *2010*

Relevant Coursework and Projects

computer science

Perception for Graphics *(CS 5650)*

Data Visualization *(CS 5630)*
- Interactive PAC12 Football Games visualization – Javascript, D3
- Interactive United Nations MY World 2015 vote project visualization – Javascript, D3
- Interactive Needle Electroanatomical Potential Tracking visualization (term project)

Database Systems *(CS 5530)*
- Online bookstore: user statistics, book searches, purchases, and user recommendations – JSP and MySQL

Machine Learning *(CS 5350)*
- Genetic variants for identifying cancer type (term project)
- Implemented a Decision Tree through ID3 algorithm and 6-fold cross-validation – Java
- Implemented Perceptron algorithm and batch/margin variants – Java
- Implemented Support Vector Machine – Java

Natural Language Processing *(CS 5340)*
- Implemented a probabilistic n-grams model of sentences – Java
- Designed and built a question answering system using CBC's current event stories – Python

Computer Security *(CS 4964)*

Computer Systems *(CS 4400)*
- Implemented a buffer overflow attack – C
- Developed a simple Unix shell – C
- Implemented the functions malloc/realloc/free using segregated free lists – C

Algorithms *(CS 4150)*

Computer Organization *(CS 3810)*

Software Practice I/II *(CS 3500, CS 3505)*
- Boggle game + user interface with score database – C# and MySQL
- Multi-user spreadsheet with concurrent editing using socket implementations – C# and C++
- FFmpeg image codec development, including encoding, compression and decoding – C

Models of Computation *(CS 3100)*

Data Structures and Algorithms *(CS 2420)*

life sciences

Genetics *(BIOL 2030)*

General Chemistry I/II *(CHEM 1210/1220)*

Organic Chemistry I/II *(CHEM 2310/2320)*

math

Engineering Probability and Statistics *(CS 3130)*

Calculus I/II/III *(MATH 1210/MATH 1220/MATH 2210)*

Discrete Structures *(CS 2100)*

writing

Professional Writing *(WRTG 3015)*

Scientific Writing *(Summer Institute in Bioinformatics and Integrative Genomics)*

Programming Languages and Environments

Languages

- object oriented
  - Java, Python, C#, C++
- web/data visualization
  - JavaScript, D3, HTML/CSS
- database systems
  - MySQL
- multi-paradigm
  - Perl, R, Racket
- hardware
  - C, x86, Arduino (C/C++)

Environments

- Eclipse
- Visual Studio 2012/2013
- DrRacket
- RStudio
- JetBrains WebStorm, PyCharm, IntelliJ
- MySQL Workbench
- Linux environments (emacs, vi)

Version Control

- Git
- Mercurial