BRIAN HIE

11825 Semillon Blvd, San Diego, CA 92131 | 858-603-7880 | BLHie1@gmail.com

EDUCATION

Stanford University, Palo Alto, CA
Computer Science, B.S. with Honors **2012-2016**
Minor in English Literature

- GPA: 3.97/4.0
- Areas of concentration: Computer systems design and engineering, data science and analytics, computational biology, machine learning
- Honors thesis: "Quantitative trait analysis of 3D genome architecture, gene co-expression, and the CCCTC-binding factor"

Oxford University, UK
Visiting Student at Magdalen College, Oxford **2015**

- Tutorial on the poetry and sermons of John Donne and other early modern English literature

WORK EXPERIENCE

Microsoft Corp., Redmond, WA
Software Engineering Intern, Azure Compute **2015**

- Developed an Azure Batch simulator to model batch computing workloads on a simulated Azure cloud data center; collaboration between Azure Compute, Azure Batch, and Microsoft Research to investigate different distributed scheduling algorithms and their impact on utilization and availability (C♯, C++)
- Used Hadoop-like framework (COSMOS) to mine real-world data to generate realistic workloads on the Azure simulator (C♯, SQL)

Synaptics, Inc., San Jose, CA
Systems Architecture/Algorithms Intern **2014**

- Developed algorithm for optimal finger tracking by solving the minimum cost bipartite matching problem (C, MATLAB)
- Updated large firmware code bases on multiple Android phone models to support new capacitive image frame processing module (C, C++)
- Built Android SELinux kernel drivers to enable an internal tool to reflash touch screen sensor ASICs on Android smartphones over Android Debug Bridge (adb)

Stanford Solar Car Project, Palo Alto, CA
Embedded Code Team Member **2012-2013**

- Developed an embedded state machine controlling the solar car's driver interface, including the steering wheel display, button board controls, and CAN bus communication (C)

RESEARCH EXPERIENCE

Stanford University, Palo Alto, CA
Hunter Fraser Laboratory, Biology **2013 – 2016**

- Investigated the relationship between genotype and patterns in gene co-expression, transcription factor binding, and the 3D organization of the genome in human populations
- Built a machine learning classifier to predict human cytomegalovirus infection of individuals based on their gene expression patterns and their genotype
- Explored the relationship between genotype and the formation and function of circular RNAs

Stanford University, Palo Alto, CA
Shakeosphere Project, Digital Humanities **2016**

- Mined data from the English Short Title Catalog to build social networks containing early modern English authors, printers, publishers, and booksellers (Python, PostgreSQL)
- Performed network analytics on the resulting network (Python)
- Visualized the network and statistics in an interactive web application (D3.js, HTML, CSS)

The Scripps Research Institute, San Diego, CA
Peter Vogt Laboratory, Cancer Research **2011**

- Investigated a potential signaling pathway link between PI3-kinase and the STAT3 transcription factor in multiple human cancer cell lines

University of California, San Diego, CA
Michael Todd Laboratory, Structural Engineering **2010**

- Analyzed high frequency signals to detect progressive damage in steel structural components using piezoelectric sensors and computational algorithms

PUBLICATIONS AND PAPERS

A.K. Tehranchi, M. Myrthil, T. Martin, **B. Hie**, D. Golan, and H.B. Fraser.
"Pooled ChIP-Seq Links Variation in Transcription Factor Binding to Complex Disease Risk"
Cell, 3:41 (2016). 2016

B. Hie.
"Gene transfer to remix: A search for copyright reform in a digital world"
Boothe Prize Essays 2014 2013

AWARDS

Hoefer Prize for Writing in the Major, Nominated, *Stanford University* 2016
Tau Beta Pi Engineering Honors Society 2015
Lunsford Award for Oral Presentation, Nominated, *Stanford University* 2014
Boothe Prize for Excellence in Writing, Honorable Mention, *Stanford University* 2013
President's Award for Academic Achievement, *Stanford University* 2013

National Merit Scholarship Finalist 2012