Justin Sybrandt

Ph.D. Candidate

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Education

Clemson University (Aug. 2016 - May 2020)

- Ph.D. in computer science. (GPA 4/4)
- Relevant Coursework: Design & Analysis of Algorithms, Advanced Data Structures, Data Mining, Distributed & Cluster Computing, Parallel Architecture, Network Science
- Member of the ACM and IEEE

Grove City College (Aug. 2012 - May 2016)

- BS in computer science, minor in mathematics.
- Graduated Summa Cum Laude (GPA 3.85/4).
- Top of class in computer science (in-major GPA 3.95/4).

Research Interests

- Machine Learning
- Hypothesis Generation
- Graph Mining
- Text Mining
- Natural Language Understanding
- Artificial Intelligence

Work Experience

Summer 2018, Ph.D. SWE Intern, Google

- Designed a graph-mining solution for identifying product attributes.
- Implemented solution at scale via Google-internal distributed systems.
- Performed comprehensive validation, ensuring classifier performance across product categories.

Summer 2017, Graduate Research Assistant - Los Alamos National Lab

- Developed high performance software in julia for non-negative matrix factorization.
- Extended MOLIERE to water resources research with the computational environmental science group (EES-16).

2015-2016, Programming Intern - Vigilant Cyber Systems, Inc.

- Developed a visualization library in Scala using ScalaFX.
- Independently managed time when working remotely.
- Balanced senior-level course work with development.

Summer 2015, Student Researcher - UC Berkeley & NERSC

- Designed and implemented a tool to quickly synchronize multi-petabyte General Parallel File Systems.
- Presented a poster at the ACM Student Poster Session at SC'15.
- Presented a work in progress paper at the Parallel Data Storage Workshop.

Summer 2014, Student Researcher - Grove City College

- Added distribution preferences to Data Stream Management Systems (DSMS).
- Simulated new DSMS features in Python.
- Studied modern DSMS through recent research papers.
- Presented a poster at the Grove City student poster session.

2012-2014, Programming Intern - Gravic Inc.

- Worked on a six person team developing tools for administering exams.
- Collaborated with corporate partners to design features which allowed our products to share data.
- Gained familiarity with project management while extending the Remark VB.NET code base.

Development Skills and Technologies

- C++
- SQL
- Linux
- Python
- C
- VIM
- Java
- Scala
- LaTeX
- Bash
- Julia
- Git

Publications

Peer-Reviewed Papers

- MOLIERE: Automatic Biomedical Hypothesis Generation System
  J Sybrandt, M Shtutman, I Safro
  SIGKDD'17. Acceptance Rate 8.8%
- Large-Scale Validation of Hypothesis Generation Systems via Candidate Ranking
  J Sybrandt, M Shtutman, I Safro
  IEEE BigData'18. Acceptance Rate 18.9%
- Are Abstracts Enough for Hypothesis Generation?
  J Sybrandt, A Carrabba, A Herzog, I Safro
  IEEE BigData'18. Acceptance Rate 18.9%

Online Preprints

- A Tale of Two Embeddings: Embed Hypergraphs with Different Member and Community Structure
  J Sybrandt, I Safro
- Using Drive-by Health Monitoring to Detect Bridge Damage Considering Environmental and Operational Effects
  W. Locke, J Sybrandt, I Safro, S Atamturktur
- To Agile, or not to Agile: A Comparison of Software Development Methodologies
  R Shaydulin, J Sybrandt

Peer-Reviewed Extended Abstracts

- Inhibition of the DEAD Box RNA Helicase 3 prevents HIV-1 Tat- and cocaine-induced neurotoxicity by targeting microglai activation
  M Aksenova, J Sybrandt, B Cui, M Lucius, H Ji, M Wyatt, I Safro, J Zhu, M Shtutman
  2019 Meeting of the NIDA Genetic Consortium. Extended Abstract & Poster
- Rapid Replication of Multi-Petabyte File Systems
  J Sybrandt, J Hick
  PDSW'15. Extended Abstract & Poster

Teaching Experience

- Spring 2018 & Fall 2018, Guest Lecture: Applied Data Science
- Fall 2017 - Spring 2018, Project Manager: Seminar in Professional Issues II

Honors and Awards

- Member of Upsilon Pi Epsilon CS Honor Society.
- Member of the Kappa Mu Epsilon National Mathematics Honor Society.
- Recipient of the GAANN DAISE & NRT PhD. fellowship.
- Recipient of a KDD'17 travel award.
- Recipient of a BigData'18 travel award.
- Member of the Alpha Tau Mu chapter of Mortarboard, a service-oriented honor society.