

BRENDAN KING

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EDUCATION

University of Washington, Seattle *June 2017*
B.S. in Computer Science & Engineering
Overall GPA: 3.63
Senior Research Project: Explorations in Deep Learning for Recipe Generation

RESEARCH AND WORK EXPERIENCE

Software Development Engineer II June 2016 - Sept. 2016, Sept. 2017 - Present
Apptio, Inc.

Current technical lead on a project that coordinates automated provisioning of all Apptio applications directly from customer data in Salesforce. Collaborate with non-technical teams to develop requirements, and design and implement interfaces for application teams to meet these needs.

Design and technical lead for a new project: a message broker interface for Apptio applications. We provide a generic, authentication and authorization aware, highly available messaging interface between Apptio applications.

Develop and operate platform-level shared services to be used throughout Apptio applications and products

Develop requirements, define interfaces for consumers, architect technical solutions to large and small problems, resolve operational issues, and communicate work to consumers.

Served as the primary mentor for our most recent engineering intern, who joined our team at the end of their internship.

Undergraduate Researcher January - June 2017
UW Allen School of Computer Science & Engineering
Dr. Yejin Choi

Completed a senior research project on natural language generation and common-sense reasoning working with graduate students under guidance of Dr. Yejin Choi.

Developed and analyzed an attention-based recurrent neural network model in Torch for recipe generation: supervised translation of a list of ingredients and dish title into a natural language procedure for producing the dish.

Explored reinforcement learning training objectives to augment and improve our model for recipe generation.

Studied and discussed of contemporary methods for natural language generation and other NLP tasks with other researchers.

Submitted a complete report detailing this experience and our experiments, which is available on my website: <https://kingb12.github.io/recipe-generation.html>

Computational Research Intern June 2015 - March 2017
Institute for Systems Biology
Dr. Nathan Price

Engaged in primary research and tool development for constraint-based metabolic reconstruction and analysis, focusing on clade-reconstruction and network gap-filling.

Implemented the probabilistic annotation algorithm and its application to probabilistic network gap-filling as a python package. This work was published in *Bioinformatics*.

- Designed and implemented algorithms for metabolic model translation from one organism to a genetic relative with improved preservation of evidence-based reactions relative to existing translation methods. This work was presented at the *COBRA 2018* conference and a manuscript is in progress.
- Presented our work internally and collaborated with researchers at other institutions throughout the process.

PUBLICATIONS AND WRITTEN WORK

Journal Articles

Brendan King, Terry Farrah, Matthew A Richards, Michael Mundy, Evangelos Simeonidis, and Nathan D Price. ProbAnnoWeb and ProbAnnoPy: probabilistic annotation and gap-filling of metabolic reconstructions. *Bioinformatics*, Volume 34, Issue 9, 01 May 2018, Pages 1594–1596.

Conference Presentations

Evangelos Simeonidis, Brendan King, Matthew A Richards, and Nathan D Price. Mighty Morphing Metabolic Models: Leveraging Manual Curations for Automatic Metabolic Reconstruction of Clades. *5th Conference on Constraint-Based Reconstruction and Analysis*. International Metabolic Engineering Society. 14 Oct. 2018. Poster presentation.

Other Writing

Brendan King, Antoine Bosselut, and Ari Holtzman. Explorations in Deep Learning for Recipe Generation. 2017. University of Washington. <https://kingb12.github.io/recipe-generation.html>

TECHNICAL STRENGTHS

Languages: Java, Python, SQL, Lua, C, C++, Javascript, Bash, Ruby, Haskell

Tools & Frameworks: Git, MySQL, Torch, PyTorch, Tensorflow, Keras, Dropwizard, Angular, jOOQ, Latex, React, D3, AWS: EC2, StepFunctions, RDS, ELB, SQS

Knowledge Areas: Software Design & Implementation, Natural Language Processing, Natural Language Generation, Machine Learning, Computational Biology, Metabolic modeling, Constraint-based linear optimization