TANNER KOOMAR

Computational Genetics

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EXPERIENCE

Graduate Research Assistant
Michaelson Lab

 May 2016 – Present   Iowa City, IA

- Took classes in bioinformatics, statistical modeling, machine learning, advanced genetics, and genomics
- Implemented/developed data processing and analysis pipelines for next-gen sequencing and SNP-array data
- Effective written and oral communication of findings
- Managed study recruitment and regulatory approval
- Mentored junior graduate students and undergraduates

Cidermaker
Sutliff Cider

 Sep 2013 – May 2015   Lisbon, IA

- Worked in an independent, self-directed manner
- Responsible for end-to-end production, from receipt of raw materials to distribution of final product

PROJECTS

Genetics of Language Impairment
Whole-genome sequencing

- **NIH-funded** study of the genetics of language impairment
- Integrated existing transcriptomic and chromatin conformation data with new sequencing data
- Analyzed **rare variation** from a genome-wide perspective

Population Genetics of Language Ability
Human subjects research recruitment

- Wrote protocol and consent documents, navigated regulatory approval by **Institutional Review Board**
- Identified potential participants from **electronic medical records**
- Oversaw a team of research assistants recruiting participants
- Prepared an approved project proposal to access to genotypic and phenotypic data from the **UKBiobank**

Web-based Language Screener
21st century tools for language assessment

- Developed a set of **computerized language assessments**; a mixture of established and new paradigms
- Managed research assistants who developed the web application and deployed via **Amazon Web Services**
- Worked with University of Iowa Hospital to deploy a version of assessments in a soundproof booth in a clinic waiting room
- Worked with nonprofit research organization SPARK to deploy to thousands of participants

EDUCATION

University of Iowa   Iowa City, IA
PhD, Computational Genetics
 Aug 2015 - Jul 2021

BS, Biology
 Aug 2013 - May 2015

Certificate, Nonprofit Managment
 Aug 2010 - May 2012

BA, Theatre
 Aug 2009 - May 2012

SKILLS

WGS   WES   GWAS   Polygenic Risk
R   ggplot2   tidyverse   Unix   LaTeX
SQL   High Performance Computing
Cloud Computing   Machine Learning

PUBLICATIONS

- Koomar, T. (2020). **VCFdbR: A method for expressing biobank-scale Variant Call Format data in a SQLite database using R**. doi:10.1101/2020.04.28.066894
- Koomar, T., & Michaelson, J. J. (2020). **Genetic Intersections of Language and Neuropsychiatric Conditions**. *Current Psychiatry Reports*, *22*(1). doi:10.1007/s11920-019-1123-z
- Brueggeman, L., Koomar, T., Huang, Y., & Michaelson, J. J. (2019). **Ensemble Modeling of Neurocognitive Performance Using MRI-Derived Brain Structure Volumes**, 124–132.
- McKenna, B., Koomar, T., Vervier, K., Kremsreiter, J., & Michaelson, J. J. (2018). **Whole-genome sequencing in a family with twin boys with autism and intellectual disability suggests multimodal polygenic risk**. *Molecular Case Studies*, *4*(6), a003285. doi:10.1101/mcs.a003285
- Bahl, E., Koomar, T., & Michaelson, J. (2017). **Cerebroviz: An R Package For Anatomical Visualization of Spatiotemporal Brain Data**. *European Neuropsychopharmacology*, *27*, S367. doi:10.1016/j.euroneuro.2016.09.392