BRIDGET KNIGHT

Greater Boston ● bridget.g.knight@gmail.com ● https://bridgetknight.github.io/

TECHNICAL SKILLS

- **Languages:** Python, Java, Javascript, HTML, CSS, R, SQL, Bash, WDL, C (Arduino), Kotlin
- **Tools:** Visual Studio Code, Linux, Git, GitHub, Arduino, Raspberry Pi, FPGA, Docker
- **Cloud-Based Technologies:** Google Cloud Platform
- **Frameworks & Libraries:** Jinja, jQuery, Keras, MERN stack, Jetpack Compose, IPyWidgets
- Public speaking and technical writing

EXPERIENCE

BROAD INSTITUTE OF MIT AND HARVARD (3.5 years) Cambridge, MA, USA
Software Engineering Intern Jun 2021 - Present

- Developed a Jupyter Notebook search engine interface in Terra for filtering and analyzing genomic variant data
- Engineered automated HTML-based reports using Jinja and Python for data visualization in Terra, streamlining malaria sequencing data analysis for researchers worldwide
- Designed and developed a self-contained graphic user interface using R, Python, and SQL to store, query, and visualize genomic variant data, improving data accessibility for analysis

SALEM STATE UNIVERSITY (1 year) Salem, MA, USA
Undergraduate Researcher Sep 2022 – Present

- Implemented a robust Jupyter Notebook interface to conduct statistical analysis and visualize pre- and post-test data from high school physics classes, enhancing data-driven decision-making for instructional improvements
- Examined video data of physics classes to investigate the impact of computational modeling on student learning

EDUCATION

SALEM STATE UNIVERSITY Salem, MA, USA
B.S. in Computer Science, Intelligent Systems. Minors in Math and Physics. GPA: 4.0 Sep 2020 - Dec 2024

- **Relevant Coursework:** Software Engineering, Machine Learning, Artificial Intelligence, Robotics
- **Activities and Societies:** Alpha Lambda Delta, Programming Club (VP), Datathon Club (VP), Commonwealth Honors Program, Upsilon Pi Epsilon
- **Honors and Awards:** Dean's List (2020 - 2024)

MARBLEHEAD HIGH SCHOOL Marblehead, MA, USA
GPA: 4.1 Sep 2016 - Jun 2020

- **Activities and Societies:** National Math Honors Society, National Art Honors Society, Programming Club

PROJECTS

SPROUTLING Salem, MA, USA
Salem State University Presented Dec 2024

- Built Arduino-based automatic plant watering system which detects moisture and supplies water, implementing voltage regulation and circuit management techniques for efficient operation
- Developed an Android application in Kotlin and Jetpack Compose utilizing WiFi to control hardware remotely
- Compiled requirements in hardware diagrams, use case diagrams, system context diagrams, and data flow diagrams

PUBLICATIONS & PRESENTATIONS

AUTOMATIC SEQUENCING REPORTS - MALARIA
Broad Institute of MIT and Harvard, Harvard School of Public Health Aug 2024

- Presented to leading immunology and infectious diseases researchers on dynamic generation of sequencing reports using Terra and WDL pipelines, highlighting the impact of automation on research efficiency and accessibility

DIGGING IN: Attending to students' epistemic emotions while computationally modeling in physics
American Association of Physics Teachers, doi.org/10.1119/perc.2024.pr.Conlin Jul 2024

BIG DATA ANALYSIS USING PYTHON AND GITHUB
Key Speaker at Women in Data Science Conference Jul 2020, Jul 2021

PLAGIARISM AND TEXT SIMILARITY DETECTION USING AI
Presenter at Massachusetts Undergraduate Research Conference Sep 2020