Reyan Shariff

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EDUCATION

Duke University   Durham, NC
Bachelor of Science in Computer Science   Aug. 2023 – May 2027
GPA: 3.768/4.00

EXPERIENCE

Machine Learning Engineer Intern   May 2024 – Present
Duke University Applied Machine Learning Lab   Durham, NC
- Implemented the P300 Speller system in Python with machine learning models including Stepwise Linear Discriminant Analysis and EEGNet.
- Applied both within-domain and cross-domain transfer learning on the pre-trained model to create a generalizable machine learning model optimal for ALS patients.

Software Engineering Intern   July 2024 – August 2024
Hickey Lab   Durham, NC
- Developed and optimized data processing pipelines for analyzing over 100,000 cell samples, leveraging Python libraries including NumPy and Pandas.
- Implemented and maintained backend functionalities for data clustering using the Leiden algorithm, enhancing the efficiency of unsupervised learning tasks.
- Integrated the OpenAI API into existing systems to enrich spatial datasets with automated annotations, improving data accessibility and usability.

PROJECTS

Platformer Game Engine   *Java, JavaFX*   March 2025 - May 2025
- Worked with a team of eight people to design a game engine from scratch specifically for platformers.
- Developed drag-and-drop level editor functionality with undo/redo support using the command pattern.
- Implemented a modular, component-based architecture to support reusable behaviors across different platformer games.
- Developed the backend architecture for the authoring environment

Cellular Automata Simulation   *Java, JavaFX*   January 2025 – March 2025
- Developed an interactive Java application using JavaFX in collaboration with a three-person team to simulate and animate 2D grid-based Cellular Automata.
- Implemented six predefined simulations (e.g., Game of Life, Watorworld) and enabled users to create custom simulations with flexible rule sets.

Sustainable Recipe Generator   *React, Node.js, JavaScript*   February 2025
- Built an AI-powered chatbot with a team of four that recommends personalized, sustainable recipes based on user input including dietary preferences, health goals, budget, and available ingredients.
- Integrated OpenAI's language models with environmental impact heuristics to promote eco-friendly cooking through ingredient reuse and seasonality.

PUBLICATIONS

- **Shariff, R.**, Lin, R., Mo, C., Zhang, D., Alumar, A., Kassaw, K., Collins, L. M., & Mainash, B. O. (2025). *Assessing the Impact of Population Data Domain Differences on Transfer Learning in P300-based Brain-Computer Interfaces (Student Abstract).* Proceedings of the AAAI Conference on Artificial Intelligence, 39(28), 29415–29417. https://doi.org/10.1609/aaai.v39i28.35271

TECHNICAL SKILLS

Languages: Java, Python, JavaScript, HTML/CSS
Frameworks: React, Node.js, Express, PyTorch, Scikit-learn
Developer Tools: Git, VS Code, Visual Studio, Jupyter Notebook
Libraries/APIs: OpenAI API, Pandas, JavaFX NumPy, TensorFlow, Pytorch, Keras, Matplotlib, Seaborn, JavaFX, Swing