Ishna S. Barwey ibarwey@berkeley.edu — (832)-714-6127 — ibarwey.github.io/

Education

- **University of California, Berkeley** Berkeley, CA
  Master of Engineering, Data Science and Systems *Aug. 2023 – May 2024*
  - *Relevant Coursework:* Natural Language Processing, Machine Learning, Applications of Parallel Computing, Product Management, Technology Strategy

- **Arizona State University (Barrett, the Honors College)** Tempe, AZ
  Bachelor of Science, Computer Science; Minor, Korean Studies *Aug. 2019 – May 2023*
  - *Relevant Coursework:* Artificial Intelligence, Data Mining, Data Structures & Algorithms, Human-Computer Interaction (HCI), Database Management Systems

Skills

- **Programming Languages**: Python, SQL, C/C++, Java, JavaScript
- **Libraries and Tools**: PyTorch, TensorFlow, NumPy, Pandas, CUDA, MySQL, PostgreSQL, Git, GitHub, GitLab, React.js, Node.js, Jira, Docker, Tableau, AWS, JUnit 4, Unity, Hugging Face, BERT, GPT-2
- **Skills**: Deep Learning, Machine Learning Models, Natural Language Processing, Transformer Models, Large Language Models, Decision Trees, Convolutional Neural Networks, Computer Vision, Model Evaluation, Feature Engineering, Fine-tuning, Clustering, Linear Regression, Parallel Programming, VR Game Development, Data Processing, Data Visualization, Data Scraping, Object Oriented Programming, HCI, UI/UX, Full-Stack Development, Data Structures, Agile, DevSecOps, CI/CD, Database Design & Management, Software Testing, Pipeline Development

Highlighted Projects & Experience

- **Deep Learning for Patent Disambiguation** Berkeley, CA
  Master's of Engineering Capstone Project *September 2023 – Present*
  - In a team, built a deep learning model to create a many-to-many classifier to group patents by inventor with 90% accuracy.
  - Developed a model to handle missing data through prediction with currently 80% accuracy.
  - Performed model fine-tuning on BERT encoder for encoding titles and abstracts.
  - Implemented and compared impacts of different loss functions such as triplet loss and contrastive loss.
  - Feature engineering on the patent data-points to extract meaningful data for use in the model.
  - Evaluated our model with metrics such as ROC curve to identify areas for improvement.

- **Corsair Ranch Software Factory at Georgia Tech Research Institute** Tucson, AZ
  Full-stack Software Engineer Intern *May 2022 – Aug. 2023*
  - Implemented full-stack features, including unit testing and database migrations and models, on an original React.js web application to allow employees to track pay in the Air Force.
  - Employed BERT model to convert natural language questions to SQL queries and developed a Python user interface with Streamlit which returned medical data from the input questions.
  - Developed company website in React.js to improve security, user interface, and usability of the site. (https://corsairranch.dso.mil/).
  - Maintained a weekly sprint schedule with daily stand-ups with Jira and GitLab in an Agile environment.

- **Center for Accelerated Operational Efficiency (CAOE) at ASU** Tempe, AZ
  Undergraduate Programming and Data Analysis Intern *Aug. 2021 - July 2022*
  - Under assistant professor Dr. Adolfo Escobedo, created user interface to gather training data for a computer vision tool to identify dangerous objects in airport baggage scans.
  - Implemented a mouse tracking feature on Amazon Turk survey, then visualized this user attention data in a heat map with NumPy to analyze and generate more effective training data.