SHOUNAK MUKHERJEE

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EDUCATION:
Bachelor of Science in Computer Engineering | Honors College | AI/ML Concentration   **Purdue University**

EXPERIENCE/EMPLOYMENT:

Undergraduate Teaching Assistance, Probabilistic Methods in Computer Engineering   **August 2024-May 2025**
- Lead and coordinating study groups, managing office hours, and providing individualized support to over 50 students.
- Helping students understand complex probabilistic methods and improving course performance.
- Technologies Used: Python, Jupyter Notebook, LaTeX, MATLAB

Fidelity Investments, Merrimack, NH, *Full Stack/AWS Undergraduate Intern*   **June 2024 – August 2024**
- Developed an AWS workflow leveraging S3 bucket to trigger a Lambda which initiates AWS Batch process and stores account data in Oracle Database
- Technologies Used: AWS Lambda, AWS Batch, S3, Java, Oracle, SQL, Terraform, Jenkins, Docker

Fidelity Investments, Merrimack, NH, *Full Stack Undergraduate Intern*   **June 2023 – December 2023**
- Spearheaded 45 data migrations to cloud using Terraform API, Jenkins Core, Docker and Rest API and Jenkins CI/CD resulted in a 15% decrease in accessibility times
- Technologies Used: Terraform, Jenkins, Docker, REST API, SQL, Java

Purdue Department of Health, IN, *Scientific Computing Intern*   **September 2022 – May 2023**
- Built a website that allows users to upload biological data and implemented a parsing method to validate the uploaded files
- Technologies Used: Python, HTML/CSS, JavaScript, SQLite

Purdue Data Mine, Purdue University, IN, *Undergraduate Data Science Researcher*   **August 2021 – May 2022**
- Collaborated with FFSA on analyzing and visualizing mRNA data provided by local hospitals
- Utilized Tableau, C#, R, Python and ML to analyze trends between 5,000 datasets
- Technologies Used: Python, R, Tableau, C#, Machine Learning, Pandas, Matplotlib

PERSONAL PROJECTS:

Electric Vehicle Charging Infrastructure Optimization, Purdue University   **Aug 2024 – May 2025**
- Developed a reinforcement learning model integrating Convolutional Neural Networks (CNNs) and Temporal Fusion Transformers (TFTs) to identify optimal locations for electric vehicle (EV) charging stations.
- Engineered synthetic datasets combining geographic, traffic, and demographic data; performed data cleaning, feature extraction, and scenario simulation to enhance model accuracy.
- Technologies Used: Python, Scikit-learn, NumPy, Matplotlib, React, TypeScript, HTML, CSS, JavaScript

Image Sorting and Classifying Project, Purdue University.   **January 2024 – June 2024**
- Designed and implemented supervised machine learning models (KNN, SVM, MLP) to classify a dataset of 5,000 images into distinct clothing categories.
- Optimized model performance using feature engineering and hyperparameter tuning.
- Technologies Used: Python, Scikit-learn, TensorFlow, OpenCV, NumPy, Pandas, Tableau

Gaussian Mixture Model and K Means Analysis, Purdue University   **October 2023 – December 2023**
- Developed a clustering framework that applies Gaussian Mixture Models and K-Means (6–10 clusters) to evaluate data distributions and assess cluster validity..
- Technologies Used: Python, Scikit-learn, NumPy, Matplotlib, React, TypeScript, HTML, CSS, JavaScript

LEADERSHIP EXPERIENCE:

Design Thinking in Technology, *Project Team Leader*   **March 2022 – April 2022**
- Led team to construct VR haptic glove, runs VR games using advanced Java programming concepts and developed compatibility with 20 VR games
- Built game for haptic glove called "Handy's World", enabled user to operate all 40 different haptic sensors in glove

Metro Hacks, Boston, MA, *Team Director*   **June 2020 – August 2020**
- Leader of Metro Hacks team and won first place, created turbidity sensor to detect if bodies of water are safe for drinking and presented findings to UN with 3 other teammates.

SKILLS AND KEY COURSE CURRICULUM

Python, Java, HTML, CSS, JavaScript, C, C++, SQL, MATLAB, BASH, GIT, Jenkins, Node JS, JIRA, AGILE, Data Science with Python, Linear Algebra, Probability Modeling using Python, Algorithms and Data Structures, Machine Learning, Software Development Processes, Operating Systems, Databases, Agile Methods, CI/CD, MS Office