Shams Rupak

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Professional Summary

Aspiring Software Engineer Intern with a strong foundation in applied mathematics, machine learning, and real-time data automation. Demonstrated skill in building high-performance Python pipelines and integrating cloud infrastructure tools. Passionate about collaborating with diverse teams to solve complex problems across the product lifecycle and enhance production infrastructure.

Education

Stony Brook University, Stony Brook, NY   **Aug 2025 - Dec 2026**
Master of Science, Engineering Artificial Intelligence

Stony Brook University, Stony Brook, NY   **Aug 2021 - May 2025**
Bachelor of Science, Applied Mathematics and Statistics
- **Coursework:** Probability Theory, Numerical Analysis, Operations Research, Financial Mathematics, Data Mining, Object-Oriented Programming, Data Structures

Experience

Extern   **May 2025 - Jul 2025**
AI and Automation Extern - Outamation   *Remote*
- Engineered AI-powered document processing workflows using Python and NLP techniques, automating classification and data extraction with computer vision, PyMuPDF, and OCR, which reduced manual handling by 60%
- Developed a RAG-powered retrieval system with LlamaIndex to enhance search precision across unstructured mortgage data while evaluating transformer-based LLMs for production-level model optimization
- Synthesized benchmarking results and deployment insights, assessing top open-source AI models for document classification with a focus on trade-offs in speed, context window, and accuracy

Stony Brook University   **Jan 2025 - Mar 2025**
Biomedical Informatics Bootcamp
- Applied machine learning techniques on biomedical datasets using Python and various visualization libraries to derive actionable insights
- Collaborated with interdisciplinary teams to address real-world healthcare challenges, showcasing a production-oriented mindset in problem-solving and solution deployment

T-Mobile   **Jul 2024 - May 2025**
Retail Mobile Expert   *Nesconset, NY*
- Exceeded 100% of monthly sales quotas by integrating AI tools such as ChatGPT and Apple Intelligence to streamline quoting processes and reduce customer interaction time
- Presented a tech-integration strategy at a corporate roundtable, contributing to enhanced team efficiency and aligning with fast-paced production environments
- Earned recognition as a Values in Action Champion by mentoring peers and driving store performance through innovative solution implementation

Extern   **Sep 2024 - Nov 2024**
Webacy Web3 Security Data Analytics Extern   *Remote*
- Conducted unsupervised machine learning analysis to identify smart contract vulnerabilities, thereby improving risk categorization accuracy in blockchain applications
- Peer-reviewed data labels to ensure 98% reliability across blockchain datasets, demonstrating meticulous attention to production data quality standards
- Explored and implemented clustering methods for anomaly detection in transaction behavior to support secure and robust data management solutions

Projects

Mortgage Document Classification with RAG & OCR   **May 2025 - Jul 2025**
                                          https://github.com/ShamsRupak/ai-doc-processing-suite.git
AI & Automation Extern
- Created document pipeline using PyMuPDF and OCR to automate mortgage document classification
- Enabled semantic search across heterogeneous file types using Retrieval-Augmented Generation

Technical Skills

- **Programming**: Python, Java, R, MATLAB, SQL, VBA, C, JavaScript
- **Libraries/Tools**: NumPy, Pandas, Matplotlib, Seaborn, PyMuPDF, OCR, PyTorch, Git, Jupyter, React
- **Competencies**: Statistical Modeling, Algorithmic Thinking, Market Simulation, Machine Learning, Natural Language Processing, Retrieval-Augmented Generation (RAG), Smart Contract Analysis, Data Visualization, Willingness To Learn