AJ Barea

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Summary

Detail-oriented Software Engineer experienced in developing scalable tools and cloud solutions using Python, React, Java, and AWS. Skilled in full-stack development and AI/ML engineering involving PyTorch, transformers, and reinforcement learning. Passionate about building reliable, intelligent systems that bridge software engineering and applied machine learning.

Education

Master of Science in Software Engineering | December 2025 | Rochester Institute of Technology, Rochester, NY

- GPA: 4.0/4.0
- **Relevant Coursework**: Software Construction, Software Architecture, Model-Driven Development, Collaborative Software Development, Engineering Cloud Software Systems, Self Adaptive Systems with Reinforcement Learning

Bachelor of Science in Computer Engineering | May 2022 | University of South Florida, Tampa, FL

- GPA: 3.06/4.0

Skills

- **Languages/Frameworks**: **Python**, **Java (Spring Boot)**, **React**, C++, C, SQL, JavaScript
- **Cloud & DevOps**: AWS (EC2, S3, Lambda, Cognitio, DynamoDB, API Gateway, CloudFront), **Docker**, **Terraform**, **GitHub Actions**
- **Tools**: Git, Perforce, Jira, Confluence, Bitbucket, VS Code, PuTTY, SSH
- **Systems & Methodologies**: Windows, Linux, Agile (Scrum)
- **AI/ML:**
  - AI-powered News Aggregator - News summarization and recommendation engine using **Hugging Face** Transformers **BART**, scikit-surprise for personalized content suggestions, and Google Text-to-Speech for audio playback
  - AI Security Evaluation System - Security auditing tool combining **CLIPS** rule-based expert systems, **PyTorch** neural networks, **reinforcement and federated learning** techniques, and scikit-learn for fallback linear regression analysis
  - AWS Image Translator - Serverless, cloud-native image-translation pipeline with **AWS Rekognition** for OCR, AWS Comprehend for language detection, AWS Translate for machine translation, and a full Terraform IaC lifecycle
  - Autonomous Robot Navigation RL - Reinforcement learning framework for Webots implementing **Q-learning and DQN** agents for autonomous navigation with state discretization, reward shaping, replay buffers, and PyTorch-based hyperparameter management

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Experience

Software Engineer (Contract) | Lowe's Home Improvement | Remote, US | Feb 2023 – Aug 2024

Application Development Support - Distribution Management Systems

- Cut daily error logs by **150,000** across RDCs by resolving bugs, optimizing log analysis, and enhancing system performance
- Developed a **full stack** app to streamline database queries and generate SQL scripts, reducing support ticket resolution time
- Authored SOPs, slashing new engineer onboarding time by **80%**
- Conducted root cause analysis for **Tier 3** support, documenting solutions in BMC SmartIT and collaborating with supervisors
- Delivered secure, tested code updates to fix bugs and boost system efficiency, tracked via Jira and Confluence
- Thrived in Agile sprints, contributing to stand-ups and retrospectives

UX Developer (Internship) | Phiquest | Tampa, FL | Mar 2022 – May 2022

- Designed wireframes for web apps, collaborating with cross-functional teams to ensure feasible, user-friendly solutions
- Engineered a blockchain-based document authenticator Chrome extension using **Node.js**, enabling secure verification