Ibrahim Tayeb

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EDUCATION

University of Illinois - Urbana-Champaign — Urbana, IL
Bachelor of Science in Computer Science, Minor in Statistics — *Expected Graduation: May 2027*
- GPA: 3.85/4.0
- Coursework: Computer Architecture, Data Structures, Algorithms, System Programming, Software Design, Probability & Statistics for Computer Science, Programming Languages & Compilers, Database Systems, Numerical Methods, Linear Algebra, Discrete Structures

EXPERIENCE

Robotics Software Engineer — August 2023 – Present
University of Illinois - Urbana-Champaign (NASA Lunabotics) — *Urbana, IL*
- Developed algorithms in C++/Python for autonomous navigation, leveraging ROS2 & SLAM toolbox to enable real-time path planning, resulting in a 25% improvement in movement efficiency and reduced collision incidents
- Integrated LIDAR sensors, computer vision cameras, and motor control units with Raspberry Pi microcomputers, achieving enhanced spatial awareness and precision control, improving positioning accuracy by 30%
- Conducted iterative testing and troubleshooting, utilizing simulations with Gazebo, reducing system errors by 20%

Software Engineer Intern — May 2025 – Aug. 2025
Amway — *Grand Rapids, MI*
- Architected scalable AWS infrastructure, containerizing applications with Docker & deploying to ECS Fargate
- Automated CI/CD pipelines using CodePipeline, achieving 99.9% uptime and reducing deployment time by 75%
- Built Streamlit dashboard with API integration, session state management, & interactive UI for data visualization & management, resulting in 40% faster data analysis workflows, & enabling users to access insights 5x faster
- Designed modular service architecture consuming REST APIs with OAuth2 authentication, token caching, error handling, and data transformation layers for seamless backend integration, improving system reliability by 60%
- Leveraged Claude Code for automated code generation, & engineered context-aware prompts to accelerate development speed by 50% through improved code quality and consistency

Software Engineer Intern — May 2024 – Aug. 2024
Amway — *Grand Rapids, MI*
- Designed and developed an internal full-stack web application using ASP.NET, HTML, CSS, JavaScript (frontend), and C#, SQL Server (backend) to streamline the process of retrieving shipment pallet stacking schematics
- Leveraged MS SQL Server to handle data storage and retrieval, allowing engineers to efficiently filter results based on specific criteria, improving decision-making and reducing shipment preparation time by 30%
- Collaborated closely with packaging engineers to ensure the application was user-friendly & met their requirements
- Utilized Windows web server, DNS, and IIS to host application, ensuring company-wide access and scalability

PROJECTS

Sentiment Analyzer | *Python, NLTK, TextBlob, Scikit-Learn, TensorFlow*
- Built a traditional machine learning model using scikit-learn, incorporating a pipeline with CountVectorizer, TfidfTransformer, and Multinomial Naive Bayes classifier, achieving high accuracy in sentiment classification
- Developed a deep learning model with TensorFlow, employing LSTM layers for advanced sentiment prediction, resulting in robust performance on complex datasets

Developer LinkTree | *TypeScript, React, Node.js, Express, Prisma, SQLite, JWT, Tailwind CSS*
- Built RESTful API with Node.js & Express, integrated Prisma ORM & SQLite for data modeling and persistence
- Implemented full user authentication using JWT, including signup, login, logout, and token expiration
- Developed a responsive frontend with protected routes, dynamic forms, and dashboard UI

TECHNICAL SKILLS

Languages: Python, C++, Java, C#, JavaScript, HTML/CSS, SQL
Frameworks: React, Express, Angular, Node.js, Flask, AWS cdk, .NET, ROS2
Developer Tools: Git, GitHub, AWS, Docker/Podman, Bitbucket, MongoDB, VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse, MS SQL Server, Linux (Ubuntu 22.04), Postman, Jupyter Notebook, ElasticSearch
Libraries: Pandas, NumPy, Matplotlib, NLTK, Scikit-Learn, TensorFlow, PyTorch, Streamlit, Requests, Plotly