<Michele Barrantes>
Software Engineering & Security

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Summary

Hard-working and determined senior Computer Science student at Indiana University Luddy School. specializing in software engineering. Experienced in full-stack development, cloud technologies, and cybersecurity principles through academic projects and personal initiatives. Eager to contribute technical expertise, collaborate in team environments, and gain hands-on experience in challenging software development roles.

Projects

Hydro Hero (Full-stack Water Tracking App):   **Summer 2024**
- Developed a **reliable**, **full-stack** web application utilizing **React** (frontend), **Spring Boot** (backend), and **PostgreSQL** (database).
- Enhanced system security using **Bcrypt**, **Spring Security**, and **MFA**, focusing on user **authentication** and **data integrity**.
- Employed **Docker Containerization** and **CI/CD pipelines** to ensure smooth deployment and reliability of user data and security functions.

Ocean Well (Full-Stack Wellness tracking system):   **Spring 2024**
- Collaborated in a 5-member **Agile** team to develop a wellness management system using **React** and **Spring Boot** for **full-stack** development.
- Led the **security** and **backend** development efforts for the system, focusing on system **reliability** through **AES** encryption, **Bcrypt**, and **MFA** with **Duo Mobile**
- Served as **Scrum Master**, responsible for security backend development, **testing**, and **managing** team workflows, **backlog** via **Jira optimizing** team performance**.**

Real-time expense tracker (Serverless Architecture & Data analytics) :   **Fall 2024**
- Designed **backend** with **AWS Lambda** and **API Gateway** for **scalable CRUD** operations, enabling **efficient** data management **without server** overhead.
- Leveraged **AWS Glue** and **Amazon Athena** to **analyze** spending **patterns** by category, period, and custom tags, providing actionable **insights** through **SQL**-**based queries**.
- **real**-**time SNS** notifications for expense threshold **alerts**, ensuring timely user engagement and financial awareness.

Disneyland Sentiment Analysis (NLP & Data Visualization):   **Summer 2024**
- Conducted an **NLP analysis** on **42,000** Disneyland reviews to evaluate sentiment across different locations (California, Paris, Hong Kong).
- Utilized **NLTK**, **SpaCy**, and **WordCloud** to preprocess text data, extract keywords, and visualize prominent themes in user reviews.
- Applied **machine learning** algorithms from **Scikit-learn**, such as **Naive-Bayes** for sentiment classification, achieving high accuracy in predicting review sentiments through **data**-**driven** analysis.

DDOS Attack (Network Security):   **Fall 2024**
- Executed **SYN spoofing** and **Slowloris** attacks on a test server, analyzing vulnerability and resource exhaustion.
- **Configured** Snort IDS and iptables rules for **detecting** malicious activity and **preventing** network attacks.

Education

COMPUTER SCIENCE B.S   2021-2025(Expected)
- Specialization in **Software Engineering**
- Minors: **Security Informatics**

Indiana University, Bloomington, IN, U.S
Deans List: Fall 2024

LinkedIN: Michele Barrantes
GitHub: m1chele11

Skills

Programming Langues: Python, Java, C, Kotlin, Javascript
AI Tools & Frameworks: TensorFlow, PyTorch, Scikit-learn, Spacy, NLTK

Libraries & Technologies: Numpy, Pandas, Pytorch, Flask, REACT, Node.js, Spring Boot, Bcrypt, Docker, Kubernetes, AWS

Ci/CD & DevOps: Git, Docker, CI/CD pipelines, Agile Methodologies

Certifications: AWS Cloud Practitioner

Tools: VS code, Intellij, Rapid API, Github, Android Studio, REST APIs, Firebase, postman, JIRA

Databases: PostgreSQL, SQLite, MongoDB

Work Experience

SOFTWARE ENGINEER   **Summer 2024**
Intern

LTC Language Solutions | Indianapolis, Indiana
- Enhanced the **reliability and performance** of the financial analysis system by adding core functionalities using **Python** and **Java**, leading to a 15% improvement in forecasting accuracy.
- **Automated ETL** reducing data processing time by 20%, and streamlining data flow for improved efficiency.
- Participated in daily **stand**-**ups**, **sprint** planning, and retrospectives as part of an **Agile team**, contributing to the timely delivery of project milestones.
- Prepared detailed reports and presentations on project progress and financial **data analysis** for senior management.

STEM PROGRAM LEADER   **Summer 2024**
Intern
DNOVA | Indianapolis, Indiana
- Led technical workshops in **web development** and **security** for underprivileged high school students, fostering an understanding of **secure software practices**.

ASSISTANT SUPERVISOR   **Fall 2022 - present**
IU REC SPORTS | Bloomington, Indiana
- **Managed** and resolved operational incidents involving over **6,000** participants, **improving** event **reliability** and **communication** during critical situations, ensuring participant satisfaction