Raoul Steve Larios Lopez

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Education

University of Illinois Urbana-Champaign Champaign, IL
Master of Science in Computer Science *August 2022 – December 2024*

Relevant Coursework: Text Information Systems, Software Engineering, Internet of Things, Cloud Computing, Data Cleaning, Foundations of Data Curation, Computational Photography, Cloud Computing Applications

University of California Riverside Riverside, CA
Bachelor of Science in Computer Science *September 2019 – June 2021*

Relevant Coursework: Software Construction, Data Structures & Algorithms, Database Management, AI, Operating Systems, Information Retrieval, Game Design, Computer Graphics, Embedded Systems

Technical Skills

Languages: Java, Python, C, C++, C#, JavaScript, SQL, Dart, Verilog, Assembly (x86), HTML/CSS, LaTeX
Developer Tools: AWS, Git, DigitalOcean, MySQL, VS Code, PyCharm, IntelliJ, Unity, Node.js, Flutter, Linux
Cloud Platforms: AWS services: EC2, IoT Core, Lambda, RDS, ElastiCache, Firehose, SageMaker, and Kubernetes
Other Skills: Fluent in Spanish. Proficiency in Hadoop, Spark, SparkSQL, and HBase for scalable data processing.

Experience

Freelance Software Developer October 2016 – November 2020
Bots for Discord *Fiverr Remote*

- Designed custom bots using Discord API in Java, featuring dynamic GUIs tailored to client needs.
- Deployed bots on Virtual Private Servers running Linux OS, managing over 1,000 active users.

Projects

Energy-Efficient Computing Research | *Java, Cloudsim* August 2024 – December 2024

- Lead a team of 4 to design experiments, analyze results, refine methodologies, and conduct research on optimizing machine learning workloads in data centers through predictive models and reinforcement learning techniques.
- Investigated energy consumption metrics to develop smart scheduling and resource allocation strategies.
- Proposed a multi-tiered orchestration system integrating energy data and Green SLAs to balance energy efficiency, carbon footprint, and performance objectives.

Cloud Computing Applications | *AWS, Python, Java, Lambda, EC2* January 2024 – May 2024

- Mastered AWS tools and services through 12 intensive programming assignments, including IoT Core, Lambda, RDS, ElastiCache, Firehose, and SageMaker.
- Built scalable cloud-based systems such as serverless applications, real-time data streaming pipelines, and containerized microservices using Docker and Kubernetes.
- Implemented Big Data solutions with Hadoop and Spark, focusing on MapReduce, SparkSQL, and machine learning in the cloud.
- Designed data visualization pipelines for analytics using AWS Firehose and SageMaker.

LTE Self-Driving Car with AWS IoT | *AWS IoT, Python, Lambda, Firehose* August 2023 – December 2023

- Developed a cloud-based infrastructure using AWS IoT to simulate and manage 120,000 vehicles.
- Implemented real-time CO2 emissions monitoring with AWS Lambda functions and MQTT protocols.
- Configured IoT Core, GreenGrass, and Firehose to process data and visualize trends using AWS Sagemaker.
- Enhanced troubleshooting and scalability with automated cloud resource management.

Twitter Sentiment Classification | *Python, BERT, NLP* January 2023 – May 2023

- Led a team to design and implement a sentiment classification model using BERT for tweets.
- Preprocessed and tokenized datasets, fine-tuning a BERT-base-uncased model for multi-class classification.
- Achieved competitive accuracy through hyperparameter optimization and data augmentation.
- Provided a leaderboard system for students to test and improve models in a competitive environment.