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Michael Barcelo

IoT Engineer

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IoT Engineer with 9+ years of experience developing connected systems, integrating edge devices with cloud platforms, and automating large-scale data workflows. Skilled in embedded programming (Arduino, ESP32), IoT communication protocols (MQTT), and backend development with Python and PHP. Experienced in designing sensor-driven solutions, building predictive analytics for real-time environments, and deploying secure, cloud-based IoT infrastructures. U.S. Citizen passionate about advancing smart technologies for research, industry, and mission-critical applications.

SKILLS

DevOps and Cloud	Azure, AWS, GCP, Ansible, Docker, Terraform, Service Fabric, Azure DevOps, Octopus Deploy, CI/CD Pipelines
Monitoring/Observability	Dynatrace, Prometheus, Application Insights, ServiceNow Integrations
Automation and Scripting	Python, PowerShell, Bash, API Development
Systems Administration	Linux (Ubuntu, Rocky, CentOS, RHEL), Windows Server, SQL Server

TECHNICAL EXPERIENCE

DevOps Engineer <i>Assurant Inc.</i>	Apr 2021 — Present <i>Miami, FL</i>
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- Developed Python-based modules for Ansible automations to streamline system updates, Service Fabric cluster management, and monitoring configurations.
- Designed automated ServiceNow-to-Ansible workflows for the onboarding and configuration of infrastructure supporting IoT-enabled services.
- Custom monitoring strategies were created using Dynatrace APIs to track the performance of connected systems and applications in global environments.
- Led training for a 15-member international Tier 1 team on managing monitoring and automation requests, reducing the internal support workload by 85%.

Systems Administrator Assistant <i>Florida International University, Division of Information Technology</i>	Dec 2019 — Mar 2021 <i>Miami, FL</i>
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- Created PHP-based APIs and Python automation scripts to integrate classroom IoT systems with Zoom dashboards for virtual learning analytics.
- Planned and executed the migration of 287 classrooms to smart environments enabled by the network, completed the project in 3 months and saving \$10,000 annually.
- Authored and standardized technical documentation for IoT-enabled classroom systems, facilitating cross-team support and training.

Media Systems Administrator (Cloud Automation Specialist) <i>Florida International University, College of Medicine</i>	Jan 2019 — Dec 2019 <i>Miami, FL</i>
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- Overhauled the Center of Children and Families' media-to-cloud pipeline, building a Django web app to automate transcoding and upload of therapy session recordings to a Haivision-hosted cloud, saving the department an estimated \$625,000.
- Maintained and secured CentOS-based servers powering media processing and surveillance systems for research facilities.

Student Assistant <i>Florida International University, Division of Information Technology</i>	Dec 2017 — Jan 2019 <i>Miami, FL</i>
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- Built a predictive inventory tracking system using PHP and regression modeling to forecast and prevent stock shortages of IoT classroom devices.
- Maintained and deployed Red Hat/CentOS servers supporting smart classroom technologies across FIU campuses.

IT Technician <i>Florida International University, Division of Information Technology</i>	Aug 2016 — Dec 2017 <i>Miami, FL</i>
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- Delivered IT support for SMB environments, including Windows Server configuration, networking, and connected device troubleshooting, and led the integration of company services into Amazon Home Services to provide IoT device setup and support to consumers.

EDUCATION

Master's of Internet of Things (IoT), Florida International University • 3.6 GPA	2023
Bachelor's of Computer Science, Florida International University • 3.15 GPA	2021

CERTIFICATIONS

- **Amazon Web Services (AWS):** AWS Cloud Practitioner, AWS Developer
- **Microsoft:** Azure Fundamentals, Azure Developer Associate, DevOps Engineer Expert
- **Github:** Github Fundamentals, Github Actions
- **IBM:** Software Engineering Fundamentals
- **Google:** Prompt Engineering, Cloud Digital Leader, Associate Cloud Engineer