

Brock McElroy

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EXPERIENCE

University of Arizona — Financial Services

Tucson, AZ

Applications Systems Analyst/Developer (Technical Lead)

Jul. 2019 — Present

- Leads development team in the design, development, and deployment of Python and JavaScript web applications
- Re-architected the university's Tuition Calculator to better accommodate an increasingly complex tuition structure
- Led design and development of a new application to manage and automate the creation of tuition rates (up to 15,000 per year), resulting in the fastest ever turnaround of a semester's tuition
- Rewrote Django applications using AWS Lambda serverless functions, reducing hosting costs by over 95%
- Developed a drop-in replacement for the legacy purchasing-card audit platform, reducing application response times by 80% on average
- Created continuous deployment workflows to build and deploy Docker images to shared virtual hosts, which save \$16,000 per year in application hosting
- Created serverless access management application using SAML and AWS Cognito, allowing single sign-on and unified authorization management independent of application platform

2U

Tucson, AZ

Full-Stack Teaching Assistant — University of Arizona

May 2019 — Jul. 2020

- Assisted instruction of full-stack web technologies (e.g. React, Express, Node.js, SQL, MongoDB) in a fast-paced, in-person coding bootcamp
- Prepared and presented lectures on fundamental version control concepts and Git usage
- Guided students through mock interview code challenges and the approaches to solving them
- Authored supplemental resource list to guide students toward continued learning after their graduation
- Provided constructive, motivating feedback on homework to improve student understanding and the resulting code

PROJECTS

- **Gojira**: A GitHub application which creates an interface between GitHub and Jira issues. Expands issue cross-references and transitions issues via comment or pull request events. Provides a comfortable union between high-level project management items and technical development tasks. Built with TypeScript, Express, and Docker.
- **gatsby-starter-stripe**: An open-source starter for a statically-generated, live-updated, serverless storefront and admin dashboard. Built-in inventory, cart, and checkout is integrated with Stripe for payment processing. Built with Gatsby, React, GraphQL, and AWS Lambda.
- **Castaway**: An app to discover, subscribe, and listen to podcasts. Features a responsive podcast player with variable playback speed and progress tracking. Built with Ruby, Rails, Docker, and StimulusJS.
- **lizard.js**: A configurable, procedurally animated, vector gecko follows the visitor's cursor using only web technologies: JavaScript and HTML Canvas. Vector geometry precludes the need for more complicated inverse kinematic math. Built with Alpine.js and paper.js.

SKILLS

- **Languages**: JavaScript, TypeScript, Python, Ruby, SQL, GraphQL
- **Technologies**: React, Vue, Django, Rails, Express, AWS, Git, GitLab CI, Tailwind CSS, fast.ai

EDUCATION

University of Arizona

Tucson, AZ

Bachelor of Science in Environmental Science

Aug. 2012 — May 2017