MATTHIEU GAY-BELLILE

SOFTWARE ENGINEER

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Skills

PROGRAMMING LANGUAGES

C#
C
C++
JavaScript (ES9, TypeScript, JSX)
Python
Java
Objective-C
HTML / CSS / SCSS
GLSL

FRAMEWORKS, PLATFORMS, AND TOOLS

.NET Core / ASP.NET Core
Docker / Kubernetes
gRPC
Consul / Vault
Terraform
Entity Framework Core
GraphQL
Node.js / Express
React
Git
Alexa Skills Kit
Spark / Databricks

AWS

SQS / SNS
S3
API Gateway
Lambda
Elastic Beanstalk
VPC
RDS / Aurora
Batch
CloudFormation

DATABASES

PostgreSQL
DynamoDB
MongoDB
Elasticsearch
MSSQL
Redis

Education

Georgia Institute of Technology — Aug. 2015 to May 2019
B.S. Computer Science 2019
Degree concentrations: Systems & Architecture / Artificial Intelligence
GPA: 3.57, Major GPA: 3.78

Employment

Kabbage — Atlanta, GA
Software Engineer — May 2019 to Current

- Developed and helped design .NET Core 3.0 gRPC streaming microservices running in Kubernetes to gather, persist, and provide runtime access to raw customer data for loan underwriting purposes
- Worked on a unified GraphQL gateway for querying customer data across multiple databases
- Maintained and debugged a large, complex, and business-critical legacy .NET system

Vlipsy — Atlanta, GA
Software Engineer — May 2018 to Apr. 2019

- Developed integrations for Facebook Messenger, Slack, Gmail, and Viber
- Designed and developed new API for use by all clients, built on Amazon API Gateway and AWS Lambda
- Leveraged EC2 resources in a hybrid serverless architecture to optimize price/performance of compute-heavy tasks

Georgia Institute of Technology — Atlanta, GA
Wreck Techs – Residential Technology Advisor — Aug. 2017 to Apr. 2019

- Performed maintenance work on the Georgia Tech network including replacing cabling and network jacks, and surveying the wireless network
- Assisted Georgia Tech students with network access, malware removal, software installation, and operating system repair

Duke Energy — Charlotte, NC
Cybersecurity "Red Team" – Penetration Testing Intern — May 2017 to Aug. 2017

- Discovered and reported a critical flaw in corporate identity & access management systems implicating physical access control
- Designed and developed an internal web application to request penetration tests from the Red Team, built on Redis Pub/Sub for a pluggable, extendable, event-driven architecture

Duke Energy — Charlotte, NC
IDEA Lab – Software Development Intern — May 2016 to Aug. 2016

- Designed and developed a web application for internal “Innovation Challenge” initiative, built on a MEAN (MongoDB, Express, Angular (2.0), Node.js) stack with Bootstrap 4 UI and a REST API backend
- Developed a framework to integrate energy usage reporting services with the Amazon Echo smart speaker, using Lambda and Alexa Skills Kit

Projects

xARMv6 Operating System
Operating systems course final project

- Ported MIT's UNIX-like xv6 teaching operating system (which runs on intel x86) to the ARM-based Raspberry Pi 2.
- Fully functional and interactive, including virtual memory management, preemptive multitasking, and a volatile in-memory filesystem

Pawgistics Web App
Degree capstone web app project

- Built for Canine Assistants, a non-profit organization that trains service dogs for people with physical disabilities, seizure conditions or other special needs
- Tracks volunteers, staff instructors, and dogs to facilitate coordination and maintain chain of custody of dogs, as well as better record-keeping
- Modern, API-backed, client-side single-page web app built with Node.js, Express, and React + Redux
- Build pipeline with full hot-reloading support for minimal development friction, or performance-tuned production build with bundling, minification, and compression

FluidSim iOS App
iOS fluid simulation personal project

- Implemented optimized smoothed-particle hydrodynamics fluid simulation algorithm in C++, based on an public implementation
- Added variable gravity based on device accelerometer, and touch interactions with the fluid
- Wrote post-processing routines in OpenGL ES to draw discrete simulation particles as a smooth, continuous fluid
- Enabled customization of fluid appearance, color, and physics through in-app menus and flexible shaders
- Designed custom UI using iOS Storyboards and Objective-C