

# MATTHIEU GAY-BELLILE

SOFTWARE ENGINEER /  
PENETRATION TESTER

✉ matthieu.gb@gatech.edu  
🌐 mgb.sh  
☎ +1 (404) 630-0386

## Skills

### PROGRAMMING LANGUAGES

JavaScript (ES5/6/7/8,  
TypeScript, JSX)

C

C++

Python

Java

HTML

CSS / SCSS

Objective-C

C#

GLSL

### FRAMEWORKS AND PLATFORMS

Node.js

Express

React

Bootstrap

MongoDB

Redis

Git

Docker

### AWS

API Gateway

Lambda

S3

Elastic Beanstalk

VPC

CloudFormation

Batch

RDS

DynamoDB

### SECURITY TOOLS

Kali Linux

Metasploit Framework

Nmap

Wireshark

hashcat

Burp Suite

sqlmap

Responder

mimikatz

## Education

Georgia Institute of Technology

B.S. Computer Science 2019

Degree concentrations: Systems & Architecture / Artificial Intelligence

GPA: 3.57, Major GPA: 3.78

Aug. 2015 to Current

## Employment

Vlipsy

Software Engineer

Atlanta, GA

May 2018 to Current

- 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

Wreck Techs – Residential Technology Advisor

Atlanta, GA

Aug. 2017 to Current

- 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

Cybersecurity "Red Team" – Penetration Testing Intern

Charlotte, NC

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

IDEA Lab – Software Development Intern

Charlotte, NC

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