## MATTHEW VAUGHAN

## Software Engineer

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#### **EXPERIENCE**

## Software Consultant

App Lighting LLC

## 11/2018 - Ongoing

North Andover, MA

My personal LLC for providing software consulting and engineering services through various online platforms

- · Provide efficient, timely, and cost-effective Android, iOS, e-commerce, telecommunication, and customer engagement solutions to small businesses
- Serve as architect and lead for larger contracts and subcontract additional designers, developers, artists, and marketers as needed

## Independent Contractor

Focus EduVation

**10/2019 - 03/2020** 

Woburn, MA

Offers a portfolio of services to enable online learning for businesses and universities

· Provided assessment materials, derived from lectures, for online courses educating students of information technology and/or data science.

## Associate Member of Technical Staff (Software Engineer ||)

Salesforce (by aquisition of Demandware)

World leader in CRM with an inclusive corporate culture

Aquired Demandware in 2015 for \$2.9B

· Implement security and platform features for a world-class SaaS e-commerce product (DemandWare) with thousands of enterprise tier clients (Kate Spade, ADIDAS, iRobot, Starbucks) and users in the hundred of millions

## Research Assistant

**Tufts University** 

**1** 01/2015 - 05/2016

Selective "right sized" university in Medford, Massachusetts

- Design declarative portion of a nano pass compiler in SML/NJ based on Andy Keep's work
- Implement a byte code executing virtual machine with parallel and concurrent generational garbage collection in C
- Target C, JVM, LLVM, and x86\_64 ASM as output languages for compilers

### Software Engineer

International Business Machine (IBM)

Monolithic employer of 300,000 with a hundred-year history gambit spanning product portfolio, among the few engaging in basic research

Implement and test user interfaces for enterprise order management system (used by Target, Best Buy, Walmart, etc)

#### Database Manager

Phoenix Technologies (by aquisition of Touchstone Software)

Software giant ubiquitous with BIOS

Acquired Touchstone Software in 2008 for \$18M

- Keep DriverAgent database of drivers up-to-date with most recently released hardware drivers for all Windows OS
- · Write PHP scripts to automate process and generate reports

#### **EDUCATION**

## **B.S.** Computer Science minor Mathematics

University of Massachusetts -Lowell

GPA

3.9 / 4.0

**2010 - 2013** 

## Ph.D. (Incomplete)

**Tufts University 2015 - 2016** 

GPA

**3.7** / 4.0

#### **STRENGTHS**

Entrepreneurial spirit

Managing my own business for the last four years, utilizing self made Twilio docker containers running **Tomcat** with **Scala** in a functional paradigm, leveraging Google Api, Google Cloud, and AWS for

rapid and reliable deployment

Microservices

Employing docker containerized microservices for web servers, databases, middleware, and **REST** API fulfillment

Full Stack

Working for eight years as an engineer and consultant (Touchstone Software, Phoenix Technologies, IBM, Demandware, Salesforce, App Lighting LLC) in Java, Scala, Node.js, and PHP stacks with Apache, Nginx, Tomcat, and Django servers all with HTML, CSS, JQuery, Velocity, Dojo, and React front ends

E-Commerce and Order Management

> Developing **DemandWare** platform and implementing **Sterling** order management user interfaces

Leadership

Subcontracting as many as four additional engineers to support larger contracts

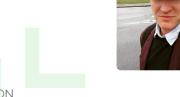
Written and verbal communication Skills

**164** verbal **GRE** score, top 33% for Harvard accepted English PhD students

Top 2% IQ Mensa qualified

"Photographic" memory

Perfect scores on delayed (<0.1%) and intermediate recall (<5%) and Eidetic memory indicated by **BVMT** 



#### **SKILLS**

## Languages (years)

| PHP(12)    | Java(6)    | C(8) | C++(5) | HTMI    | L(12) | JavaScri | pt(12) |
|------------|------------|------|--------|---------|-------|----------|--------|
| CSS(10)    | Haskell(2) | Sch  | eme(3) | SML/N   | J(3)  | Scala(4) | JSP(5) |
| Node.js(4) | JSON(11)   | XI   | ML(11) | Python( | (3)   |          |        |

## Tools

| Git  | Jenkins     | Bash  | SSH   | Virtu | al Box |        |  |
|------|-------------|-------|-------|-------|--------|--------|--|
| VMW  | are Worksta | ation | Linux | RDP   | AWS    | Docker |  |
| Kube | rnetes      |       |       |       |        |        |  |

## Databases and servers

| Oracle | MongoDB | Tomcat | Apache | Nginx | OpenSMTPd |
|--------|---------|--------|--------|-------|-----------|
| Django | Express |        |        |       |           |

## Headaches I'm Used To

| CORS | XSS | SSL | Legacy code | Race conditions |
|------|-----|-----|-------------|-----------------|
|------|-----|-----|-------------|-----------------|

#### **PROJECTS**

## Telepath

## 10/2020 - Ongoing

5g headset that reads your mind (see AlterEgo MIT Media Lab) to act as a substitute for smartphones, no screens required

- Hardware consisting of wearable bone conduction materials or (in theory) vocal fold augments and cochlear implants
- Runs on Android Wearable and supports a (theoretical future) ecosystem of third party apps

## Research

 $ext{ } ext{ } ext{ } ext{Ongoing } ext{ }$ 

Mathematics of Thought

- Developed math formalisms for "thoughts" given a directed graph of "neurons"
- Demonstrated how these graphs could be used to simulate Turing machines, hence, how neurons could simulate Turing machines

# Voicemail Replacement and Appointment Scheduler

Voicemail and appointment scheduler replaces your existing voicemail forwarding number and allows callers to schedule appointments

- Using phone forwarding codes (like Google Voice does), you replace your current voicemail number with a Twilio number
- Callers reach your mailbox with an option to "leave a message" or "book an appointment"
- You receive an SMS containing the transcript of the voicemail, or appointment details
- · Integrates with google calendar