

## EXPERIENCE

### Sparq - Atlanta, Georgia (Remote)

#### Senior Consultant

March 2022 - Present

- Contributed to an API for a health coaching company in Java on AWS.
- Team Lead for a small group working on Java microservices for a client in call center management.

### GotSoccer LLC - Neptune Beach, Florida (Remote)

#### Optimization Expert

February 2019 - February 2022

- Solved professional sports scheduling problems modeled as MILPs in Gurobi and CPLEX.
- Developed constraints and algorithms for a Python library used to solve scheduling problems.
- Built a custom simulated annealing solver in Java for the NBA scheduling problem.
- Learned Ruby on Rails in order to contribute to web platform integration of pro scheduling system.
- Created a hybrid ticket scanning app for Android and IOS using Ionic/Capacitor and Typescript.

### SageKey Software - Penticton, British Columbia (Remote)

#### Software Engineer

August 2018 - December 2018

- Built an auto part selection system for transmission schematics in .NET, Elastic, and JS; then integrated it into a Magento store.

### Xeratec Corporation - Hancock, Michigan

#### Software Engineer

November 2013 - August 2018

- Maintained and extended a Java EE application for a client in the insurance industry.
- Lead programmer on a Java based project using Spring, MS SQL, and Angular for a client in pharmaceutical warehousing.
- Technical lead on a Windows based civil engineering application in Visual C++.
- Worked on several .NET web applications using MS web frameworks and SQL Server.

### Signature Research - Calumet, Michigan

#### Software Engineer I

January 2011 - March 2013

- Contributed extensively to a physics based temperature prediction and hyperspectral raytracing project capable of generating imagery for any band from thermal to visible.
- Worked with a highly object oriented code base equipped with both multiprocessing and threading capabilities.
- Became familiar with meteorological data and simulations including atmospheric radiation and transmission modeling with MODTRAN.
- Implemented several mathematical models for phenomena including ocean waves, cumulus clouds, material based surface reflections, and polarized light.

### IMTEK, Albert-Ludwigs-Universität - Freiburg, Germany

#### Research Assistant

January 2009 - July 2009

- Attempted to add MPI parallelization to a general purpose particle dynamics code written in C++ with OpenMP.

### Signature Research - Calumet, Michigan

#### Software Developer

April 2008 - September 2008

- Worked with a senior researcher to design an image reconstruction algorithm.
- Created an application for resizing DEM raster data using different interpolation and smoothing algorithms.

## CONTACT

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<https://github.com/up-busab>

## SKILLS

### Code Polyglot

C · C++ · Python · Java · C# · Fortran  
· TypeScript · JavaScript · Ruby  
· Visual Basic · PHP

### Mathematical Programming

Gurobi · CPLEX · Mathematica  
· Matlab · FFTW

### Databases

Postgres · MariaDB · MS SQL  
· MongoDB · Elasticsearch

### Devops & Build Systems

Docker · Kubernetes · Maven · make  
· Travis · CircleCI · Github Actions

### Graphics & GUI

OpenGL · SDL · QT · Mitsuba  
· POVRay · Visual C++

### Parallel Programming

MPI · OpenMP · PThreads · NVIDIA  
CUDA · UPC

### Web Frameworks

Spring/Spring Boot · .NET · Rails  
· Magento

### Frontend & Mobile Technologies

Angular · HTML 5 · CSS · Bootstrap  
· Ionic/Capacitor · JQuery

## EDUCATION

### M.S. - Mathematics

Michigan Tech, 2008

- Combinatorics & Algebra
- Algorithms & High Performance Computing

### B.S. - Mathematics

Michigan Tech, 2006

- Minor in Computer Science