Matthew Aaron Miller

Contact Information

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Objective

To obtain a position in software or simulation. I enjoy working on teams, software quality, learning new technologies, and solving problems from many different domains.

Recent Professional Experience

Rural Sourcing - Atlanta, Georgia (Remote)

Senior Consultant March 2022 - Present

- 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.
- Devloped 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.

Education

Michigan Technological University - Houghton, Michigan

M.S., Mathematics, December 2008

- Report: *Implementing and Understanding Algorithms in Unified Parallel C*

B.S., Mathematics, August 2006

- Minor in Computer Science

Technical Skills

Modeling optimization problems as MILPs using Gurobi or Cplex in Python.

Scientific programming in C, C++, Modern C++, Fortran, Matlab, and Mathematica.

Java web application programming using Spring, Maven, MyBatis, Hibernate; deployment on Tomcat servers.

Fullstack web development on other platforms such as Ruby on Rails and PHP.

Database work in SQL on MS SQL Server, MySQL, and SQLite; including TSQL stored procedures.

Obsession with using Docker to package runtime environments and complicated build systems.

Experience using continuous integration platforms such as CircleCI and Travis.

Frontend web development for in HTML5, CSS, JS, JQuery, Angular, and Bootstrap.

Mobile app development for Android and IOS using Ionic/Capacitor and Typescript

Rules engine development in JBoss Enterprise BRMS (Drools).

Experience with .NET web frameworks such as ASP.NET and MS MVC; deployment on IIS

.NET programming in C#, VB, and VC++; including work with Entity Framework.

Integration work in MS SSIS and SSAS; reporting in SSRS and Telerik Reports.

Parallel programming on clusters and shared memory architectures in Unified Parallel C, MPI, OpenMP, and NVIDIA CUDA.

A broad range of mathematical subjects including advanced calculus, theoretical and numerical linear algebra, and PDEs.

Discrete mathematics, including combinatorics, abstract algebra, and algorithms.

3D computer graphics and GUI creation using OpenGL, SDL, and QT.

Familiarity with Linux and use of scientific libraries such as FFTW and GSL.

Fluent in LaTeX and noweb systems for documents and presentations.

Past Professional Experience

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.

Army High Performance Computing Research Center - Minneapolis, Minnesota

Student Intern June 2005 - August 2005

- Completed a short research project in computational fluid dynamics.
- Aided other interns to learn about computing on a Cray X1.

Academic Experience

Finlandia University - Hancock, Michigan

Adjunct Instructor August 2010 - December 2010

- Delivered weekly lectures in addition to developing and grading exams and homework sets.
- Taught two sections of elementary algebra and worked in the tutoring center.

Michigan Technological University - Houghton, Michigan

Graduate Student/Adjunct Instructor Autumn 2006 - Spring 2010

- Delivered weekly lectures in addition to developing and grading exams and homework sets.
- Taught several different courses ranging from elementary algebra to second semester calculus.

Math Lab Course Coordinator Spring/Summer 2008, Autumn 2009

- Managed and instructed undergraduate lab TA's.
- Oversaw automated assignment and grading procedures for over 1200 students.

Grader Summer 2007

- Graded programs written by students for a graduate level course in scientific programming.