Shijing Li

My GitHub Link: https://github.com/shijinggwu

Summary

Technically sophisticated professional with proven expertise in Java/Python/C/C++/C# programming, machine learning, research, project management, and technical troubleshooting. Seeking to obtain a new role as a Junior .NET Engineer to build upon the training I received at GenSpark.

Skills (GenSpark Training)

• C# • ASP.NET • ASP.NET Core • Web API • SQL • HTML • CSS • Bootstrap • JavaScript • React • JQuery • Ajax • Azure • Docker • Containers • Microservices • Git • GitHub

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Additional Skills

• TensorFlow (Machine Learning) • Java • Python • C • C++ • Cassandra • Linux • OpenStack • Amazon EC2

Experience

Junior .NET Engineer at GenSpark

Dec 2022 – Present

- Completed a 12-week, full-time, classroom-based skills development and training program on the .NET technology and framework.
- Built an intelligent machine learning based charity support system with C#, ASP.NET core, Web API, React, Azure SQL server, TensorFlow, and ML.NET.
- Built applications using C#, ASP.NET Core, ASP.NET MVC, Web API, JavaScript/jQuery/Ajax, HTML, CSS (bootstrap) including a recursive traversal of directory structure using File handling in C#, a Job Application Form using Windows Forms, and HR Management using ASP.NET MVC, Problem tracking application using Web APIs.
- Utilized frameworks including Console App and class libraries, ASP.NET webforms, MVC, and Web API.
- Demonstrated strong verbal and written communication skills, including the ability to explain technical information and terminology to non-technical end users.
- Environment: ASP.NET Core, SQL Server, Visual Studio, SQL Server Management Studio.

Research Assistant at George Washington University

August 2014 – May 2022

- Did research in the field of machine learning, cloud storage, network resource allocation optimization, distributed systems, edge computing, IoT, and published 7 papers in INFOCOM, ICDCS, IEEE TPDS, IEEE TNSE.
- Designed machine learning algorithms for research projects (Python, RNN, CNN, LSTM).
- Designed algorithms and built Cassandra distributed systems (C, C++, Cassandra, Amazon EC2, OpenStack).
- Designed algorithms and did simulations or research projects (Java, Python, C, C++, MATLAB, NS2).

Internship – Software Developer (C, C++, Java, Python) at AT&T Research Lab

May 2015 – 2020

- Onsite internship: May 2015 - July 2015, June 2016 - August 2016, Remote cooperation: 2017-2020.
- Built distributed Cassandra based systems on OpenStack and Amazon EC2 (C, C++, Cassandra, OpenStack, Amazon EC2, Linux).

- Designed algorithms and did simulations for projects (Java, Python, C, C++).
- Published 5 papers with AT&T mentors in total.

Research Assistant at Research Institute of Information Technology, Tsinghua University
April 2013 – May 2014

- Doing research in the field of communication fusion.
- Exploring solutions for the coexistence problem caused by Zigbee and Wifi nodes.
- Doing simulations and developing hardware devices.
- NS2, OPNET Modeler, Linux system, Qt Creator, C and C++ programming.

Projects

Charity Support System How You Can

Feb. 2023, Genspark

- Built an intelligent machine learning based charity support system with C#, ASP.NET core, Web API, React, Azure SQL server, TensorFlow, Stripe API, ML.NET, GitHub.
- The system provides online post, buy, rent, pickup and delivery features to help both charity organizations and individual users.
- Based on previously sold prices (importing data from Azure SQL server), the system uses machine learning methods to predict proper selling price for newly arrived donated items and provides intelligent suggestions for the assignment of donated items including giving out, selling, or renting. All of the machine learning methods are coded in C#, ASP.NET Core Web API controllers and Microsoft.ML.TensorFlow. (Multiple-dimensional regression, One-hot encoding)
- The system provides auto email sending features (SMTP).
- The system provides online payment features (Stripe / Paypal API).

Forecasting performance anomalies in the cloud using deep learning

2021 - 2022, George Washington University

- Designed a two-layer machine learning based system to predict server status anomalies ahead.
- Designed machine learning algorithms using LSTM (long short-term memory networks), RNN (recurrent neural networks), ANN (Artificial neural network).
- Used real-world monitoring metrics obtained from Amazon EC2 instances (Amazon EC2, Amazon CloudWatch).
- Coded the system by Python.

HotDedup: Managing Hot Data Storage at Network Edge through Optimal Distributed Deduplication

2019-2020, George Washington University

- Presented and solved a joint optimization problem by exploiting both data popularity (for optimal data access performance) and data similarity (for optimal storage space efficiency) among edge and cloud nodes.
- Proved theoretical performance bounds and evaluated performance in real system
- Real testing system is built in Amazon EC2 VMs, using Cassandra database
- Published 1 paper in IEEE INFOCOM (shared in GitHub)

EF-dedup: Enabling Collaborative Data Deduplication at the Network Edge

2018 - 2020, AT&T Research Lab, George Washington University

- Propose a new technique for collaborative edge-facilitated deduplication (EF-dedup), wherein partition the resource-constrained edge nodes into disjoint clusters, maintain a deduplication index structure for each cluster using a distributed key-value store and perform decentralized deduplication within those clusters.
- The system is built in Amazon EC2 and OpenStack VMs, using Cassandra database
- File processing is done by C programming for efficiency, and the processed file chunks are maintained in Cassandra database.
- Implemented and customized C programming based Cassandra interface and open-source file processing codes.
- Published 2 papers in IEEE ICDCS and IEEE TNSE (papers are shared in GitHub)

National-level Innovative Project, Team Leader (Application of Image Identification in Detecting the Quality of Rice)
May 2012 – May 2013, Beijing University of Posts and Telecommunications

- Led a student research team, applied funds for project, assigned tasks to teammates, did presentations
- Designed an equipment for automatically detecting the quality of rice
- Designed algorithms of image identification (C++ programming, Machine Learning)
- Programmed 8051 single-chip microcontroller (C programming)
- This project was demonstrated at the “Exhibition for College Student Research and Career-creation Program of Beijing”, representing the Beijing University of Posts and Telecommunications with other 5 projects selected from 200 projects.

Education

George Washington University
PhD, May 2022

- **GPA:** 3.69
- **Major:** Electrical Engineering, **Focus:** Communications and networks

Beijing University of Posts and Telecommunications
Bachelor of Engineering, July 2014

- **Major:** Communication Engineering

Minnesota State University
Global Undergraduate Exchange Program - exchange student sponsored by the U.S. Department of States, May 2012

- As one of 10 students all over China selected to participate in the exchange program.
- **Major:** Electronic Engineering Technology

Certification

GenSpark .NET Full Stack Developer Certification – March , 2023