Xi Yu

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EXPERIENCE

Software Developer | Spruce Box Construction Inc. (Portland, OR) 09/2022-present

- Developed company's internal tool automatically injecting data into cloud-based management software, reduced operating time consumption by **30%**, reduced cost by **10%**
- Led the project management stages to select ambitious, but realistic coding milestones on pre-release software
- Led the process of whole software development life-cycle from requirement gathering to production releases

Data Automation (source code) skills: C#, LibreAutomate

- Led the design, architecture and implementation of back-end features, researched new technologies to maximize and enhance the deployment efficiency, optimized work-flows of accounting process in management software Buildertrend and Quickbooks
- Wrote script on open-source tool LibreAutomate C#, captured UI elements, automated the process of injecting data into cloud-based management software

Manufacturing Test Technician 2 | Lam Research Inc. (Tualatin, OR) 09/2022-11/2022

- Responsible for testing multiple front-end wafer-fabrication product such as SABRE, SABRE 3D and SABRE FI-PPT
- Promoted to White Hat (Independent worker) in **3** month (shortest record) to work on new assignments with minimal supervision
- Performed leak/sensor check (vacuum, water, pressure decay) using debug tools like Cell Fusion/KM Matrix
- Worked with coworkers on specialized test projects for Gemini tool, using proper escalation path

Teaching Assistant | Computer Science department at Portland State University (Portland,OR) 09/2018-08/2019

- Tutored lower division computer science students in discrete math, algorithms, procedural programming and data structures in Python
- Review assignments and gave feedback on coding skills, reliability, and function

Research Assistant | Computer Science department at Portland State University (Portland,OR) 09/2018-12/2021

- Gathered, arranged, and corrected research data to create representative graphs and carts highlighting results for presentations
- Performed qualitative, and quantitative analysis with Matlab, implemented data visualization
- Attended seminars and symposiums to improve overall knowledge and understanding
- Worked both independently and collaboratively in fast-paced laboratory environment

Systems and Networks (source code)(video) skills: C, XNU, Unix, socket programming, curl, script, Wireshark,Vim

- Upgraded server with multi-threads processing to reduce systems burden on back-end server, improved **100%**+ time efficiency
- Implemented the client-side package sending in curl, wrote script to send packets for testing
- Implemented socket APIs to establish communication links between remote and local portal
- Monitored network performance and connection with WireShark

5G Network skills: Matlab, Linux,Ubuntu, bash, Homebrew

- Simulated different mathematical models(e.g. Monte Carlo) for sector sweep in mmWave and 802.11 ad protocol initial access process to find best beam for transmission
- Collaborate worked on setting up Iris-030 SDR platform for SDR research, flashing the update image to SD card and troubleshooting

Sensor Test-bed/ Mobile Health (source code) skills: C, Arduino

- Collaborated designed Sleepy - a contactless sleep-monitoring device to help recognize sleep quality, collected data from sensors that monitoring human body movement, visible light, CO_2 density etc.
- Reached 95% accuracy, far better than Fitbit, iWatch and iPhone, meet user satisfaction of convenience in sleep monitoring
- Collaborated work on setting up Arduino platform with breadboard, jumper wires, PIR motion sensor and photoelectric sensor, worked on Arduino IDE

AR/ VR/ MR/ XR (source code) Skills: Unity, C#, Xcode

- Collaborated work on interactive game Crazy Kitchen, implemented locomotion and customer hand
- Developed Vuforia Engine AR package on Unity, added the Vuforia Camera and Vuforia marker, implemented on iPhone

Computer Graphics (source code) skills: C++, Visual Studio, FLTK, OpenGL

- Created a virtual 3D amusement park with OpenGL, did texture mapping and parametric instancing, emphasized on aesthetics
- Built an image editing tool includes dithering, sampling, filtering and composition with FLTK library

Multimedia (source code) skills: C, C++, GDB, Google test, Github

- Worked on compression with bit manipulation, reached compression ratio **60%**+ in JPEG
- Collaborated worked on an image compression tool using LZW encoding and decoding

ML (source code) skills: Python, Numpy, Pandas

- Solved the Titanic problem with Decision Tree, SVM, Logistic Regression, KNN, compared the prediction accuracy in mean absolute error (MAE), compared the advantage and disadvantages of supervised learning and unsupervised learning
- Trained the data under supervised and unsupervised learning, showed results with Numpy, built and trained networks of perceptrons with linear activation functions, worked on back-propagation to build multi-layers neural network

AI (source code) skills: Python, OpenAI Gym

- Implemented reinforce learning (Compare Q-learning and double Q-learning) with OpenAI Gym to solve Cart Pole problem
- Implemented algorithms: Q-learning, A* search, genetic algorithm, Monte Carlo search and simulated annealing
- Implemented ant colony algorithms and simulate to find the best index in a model

Lead Art Editor & Retail Represent | AsusTek Computer Inc. (Shenyang, China, PRC) 11/2010-06/2012

- Conducted market analysis among ASUS computer retailers in Shenyang
- Responsible for online management of ASUS forum and offline promotion for our products
- Conducted brand marketing and sold our products in a retailer during summer vacation
- Conducted market research to survey which retailer will recommend ASUS mainboard and graphics card to customers
- Promoted the team badge making activity of Shenyang on social media platforms, posted tutorial of designing process on Bulletin Board System, collected the designs from various colleges campus and invited students to vote for their favorite, picked out the best design, produced physical badges and distributed to all team members across 3 school campuses

TECHNICAL SKILLS

Programming Languages: C, C++, C#, Matlab, Python, Scala, Java, SQL, JavaScript, CSS, HTML, .NET
Software Tools: Github, LaTex, Selenium, WireShark, curl, MS Visio, Xcode, Visual Studio, Unity, Numpy, OAuth, socket programming, Vim, GDB, Numpy, Pandas
Operating Systems: Windows, Linux, Unix, MacOS, Shell script, Bash

RESEARCH EXPERIENCES

Design, Analysis and Applications of mmWave Full-Duplex Wireless (PSU) 09/2020-06/2021

- Learned the state-of-art 802.11ad protocol, collected and analyzed data, tested and simulated the different sector swap and found the best allocation, duplicated the state-of-arts research experiments

Research on RF Techniques for State Sensing in Complex Environment 08/2017-09/2020

- Responsible for algorithm design and system design, conducted system analysis through modeling, implemented the system

Research on the Key Techniques of Spectrum Management in Cognitive Radio Networks 01/2013-12/2016

- Sorted out relevant literature, established mathematical model, responsible for system analysis and testing

Study on Key Development of Internet Plus in Dalian 10/2015-10/2016

- Designed questionnaires and posted them on the Internet, conducted group discussion, formulated pattern for community nursing service, made slides to share our ideas
- Formulated pattern for community nursing service for elder people, built the structure of elderly care service regarding government policy, designed questionnaires and posted to the underlying customers and gained public awareness

PUBLICATIONS

Suresh Srinivasan, **Xi Yu**, A. Keshavarz-Haddad, Ehsan Aryafar, "**Fair Initial Access Design for mmWave Wireless**", *The International Conference on Network Protocols (IEEE ICNP 2020)* 10/10/2019

Xi Yu, Weilian Xue, "**Joint Spectrum Allocation and Power Control for Cognitive Radio Networks Based on Potential Game**", *The International Symposium on Networks, Computers and Communications(IEEE ISNCC 2018)* 04/01/2018

Weilian Xue, **Xi Yu**, et.al., "Study on School Bus Path Planning Based on Improved Ant Colony Algorithm", *Journal of Transport Science and Engineering* 03/30/2017

Weilian Xue, **Xi Yu**, et.al., "Study on One-way School Bus Path Planning Based on Flooding Algorithm", *Logistics Technology*10/25/2016

EDUCATION

Portland State University (PSU) | GPA: 3.43/4 09/2018-12/2021

- M.S. of Computer Science | Independent Research in cognitive wireless networks | advisor: Dr. Nirupama Bulusu

Liaoning Normal University (LNNU) | GPA:91/100 09/2015-06/2018

- M.Mgmt. in Management Science and Engineering | President of Information Department of LNNU Graduates' Union | advisor: Dr. Weilian Xue

Dalian University of Technology (exchange experience) 01/2017-01/2018

- Major: Computer Science and Technology (Lab for Ph.D.) | advisor: Dr. Heng Qi

Shenyang Ligong University (SLU) | GPA:3.25/4 09/2010-06/2014

- B.Mgmt in Information Management and Information Systems

HONORS & AWARDS

IEEE Pervasive Computing and Communications 2021 NSF Participation grants for US-based students 03/2021

VOLUNTEER

SKY Breathwork & Meditation at PSU REC Center 06/2020-present

- Community building and support, event support, usher, escort

Mentor Program and Scholarship Program | Portland Women In Tech (PDXWIT) 07/2022-present

- Enhance the professional development of women in technology by building trust and creating partnerships in the Portland community, Helped no-tech background mentees to transform to tech related roles
- Review scholarship applications, give comments and feedback for improvement to community members