KEVIN HJELDEN

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OBJECTIVE: To create awesome things

WORK EXPERIENCE: TechnipFMC Schilling Robotics – Principal Software Engineer – May 2007 - Present

- Head architect for software system controlling an underwater remotely operated vehicle (ROV).
- Created CI/CD pipeline with a custom build agent that targets Windows and VxWorks.
- Architected Electron application for control of a robotic manipulator using ROS.
- Designed architecture for automated movements of a robot arm with computer vision.
- Created application for simulating devices on an ROV to test without needing hardware.
- Created software to record video from underwater cameras for archival.
- Added features to firmware for serial-over-ethernet module for timestamping data.
- Worked with agile processes – Scrum, Kanban, TDD, Pair Programming.
- Mentored junior developers with best practices and code reviews.

WORK EXPERIENCE: CWNet, Inc – Web Application Developer – Fall 1999 – May 2006

- Created and maintained Customer Service web application.
- Installed and customized Asterisk system that integrates with Custom Service web application.

EDUCTATION: California State University, Sacramento – Bachelor of Arts – Completed Fall 2006

- Double Major, Computer Science and Mathematics

PROJECT EXPERIENCE:

Underwater ROV control system: Designed and created software stack for controlling an underwater ROV. Each type of component in the stack is in its own process and uses the DDS middleware to communicate. The user interface is in C# using WPF to render, business logic is written in C# on Windows, and control loops communicating with devices are in C++ on VxWorks.

Automated Control of a Robot Arm: Participated in Research & Development program for using computer vision to assist with remote manipulation operations. Created firmware for camera that allowed it to take an image, correct it for underwater distortion and extract April Tags from the image. Created architecture for representing 3D coordinate transformations to be used for moving the robot manipulator.

Video Recorder: Created an application for recording video coming from underwater cameras. The video is received over ethernet from a custom H264 encoder and transmitted over RTSP via multicast. The video is then decoded, an overlay is applied to it, then re-encoded using a lower-bit rate for storage. All the videos are available to be annotated with events and exported to an external hard drive for delivery to the customer.

PDF To Foundry: Created an application for the Foundry Virtual Tabletop software that takes PDFs for Pathfinder 2E and extracts the text and images from it and puts them into FoundryVTT.

Kingpin: Created a 250-pound combat robot for the 2019 season of the television show BattleBots. Designed the parts using Fusion 360 and fabricated and assembled them, utilizing waterjet services where necessary.

KEYWORDS FOR THE RESUME BOT:

- C, C++, C# (.NET), HTML/CSS, Java, Javascript, Lua, Perl, PHP, Python, Rust, SQL, Typescript
- WPF, WinForms, WTL, Electron, React, ROS, DDS, NUnit, MSTest, xUnit, Prism (WPF), Unity, OpenCV
- Agile, Scrum, Kanban, TDD, CI/CD, Infrastructure as Code (IaC), Docker, Containers, K8S, DevOps
- Microsoft SQL Server, MySQL, Mariadb, SQLite, SQL CE, Entity Framework
- Git, Github, Bitbucket, Gitlab, Azure Devops, TFS, JIRA, SVN, CVS, SourceSafe, Confluence, OneNote
- Windows, Linux, VxWorks, TCP, UDP, IP, Ethernet, RSTP, RTSP, RTPS, Serial, RS-232, RS-485, REST