DAVID LAWRENCE PEARSON

OCEAN & MECHANICAL SYSTEMS ENGINEER

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SUMMARY

AS an Ocean Engineer at ASV LLC, I am constantly exposed to new challenges as we push the boundaries of the unmanned maritime industry. Working with a small multidiscipline team on the cutting edge of innovation, I lend my education, imagination, analysis and experience to design, develop, implement, test and operate unmanned marine systems for oil-gas and government projects offshore.

I attained my M.S. Degree in Ocean Engineering from FAU SeaTech campus, with a B.S. in Mechanical Engineering from FAU (ABET accredited). My extensive graduate research and in simulation and development of guidance, navigation and control systems for autonomous unmanned maritime vehicles and mechanical-electrical engineering design project experiences makes me a preferred candidate for an engineering career role in the Robotics, Automation, Control, Analysis, Modeling/Simulation for applications in the Academic, Government, Defense, Oil-Gas or Maritime fields.

EDUCATION

Masters of Science, Ocean Engineering

January 2013 - December, 2014

Florida Atlantic University, SeaTech Dania Beach Campus

GPA 3.753 /4.0

- Thesis Topic: "A High-Level Fuzzy Logic Guidance Controller for an Unmanned Surface Vehicle (USV) Tasked to Perform an Autonomous Launch and Recovery (ALR) mission of an Autonomous Underwater Vessel (AUV)"

Related Course Work

- Ocean Instrumentation
- Intelligent Underwater Vehicles, Modeling and Control
- Kalman Filtering for Navigation
- Advanced Hydrodynamics
- Advanced Computational Fluid Dynamics
- Physical Aspects of Oceanography
- Engineering Data Analysis
- Mathematical Methods in Ocean Engineering
- High-Level Control of USVs

Bachelors of Science, Mechanical Engineering

August 2008 - December, 2012

Florida Atlantic University, Boca Raton Campus

GPA 3.206 /4.0

- Senior Design Project: 3-DOF Robotic Arm, Belts driven by DC Motors, with Arm Joints coupled to potentiometers for orientation feedback to PID Controllers for linkage orientation control.
- Undergraduate Research: Advanced Heat Sink Research Project using Phase Change Material and Open Cell Aluminum Foam, designed, fabricated the Heat Sink and the experiment apparatus to test high power dissipation at varying operating frequencies

SKILLS & ABILITIES

- Office Products – Proposals, Technical Reports, Presentations, Spreadsheets, Scheduling (Microsoft Office & Google)
- Matlab & Simulink – Data Analysis, Control Design, Mathematical Modeling, Rapid Prototyping, Simulation
- Mechanical Design – Robust/Lean Component & Mechanisms Design, Fatigue/Failure Analysis, Material selection
- Electro-Mechanical Design – Propulsion Systems, Feedback Sensors, DC Motors, Stepper Motors, Linear Actuators,
- Controls – Proportional Integral Derivative, Fuzzy Logic, Sliding Mode, Neuro-Fuzzy, Adaptive, Model Predictive

- AUV/ASV Development – Mission Orientated Command and Control Architecture Development, Navigation (GPS, INS, DVL) Guidance, Control, Propulsion, Communications, Mathematical Modeling, Systems Identification, Simulation
- CAD – Solid Works, Engineering Design and Simulation of Mechanical Components, Mechanisms and Systems
- Finite Element Analysis – SolidWorks FEA, ANSYS, FLUENT 2/3D Fluid Flow Simulations
- Machining/Fabrication –Mill, Lathe, Angle Grinders, Drill Press, Component Modification, Wood Working
- Electronics – Soldering, Bread/Breakout Board development, Analog Filters, Relays, Operational Amplifiers
- Programing – C/C++,Matlab, Python, Arduino, WAGO PLC, some Centos/Linux experience
- Microcontroller/ PLC – Relay control, Data Acquisition, Actuator Control, Feedback Control, Digital Signal Filters, Thermocouple, RTD, Thermistor, Strain Gauges, Potentiometers, Optical Encoders,
- Networking/Comms– NMEA 0183/2000, Serial Comms RS-232, USB, Ethernet
- Line of Sight Radios - UHF, IP Mesh Radios (900 MHz, 1.3, 2.4, 5 GHz)

Organizations & Activities

- Sigma Phi Epsilon, FL Xi
- Order of Omega FAU chapter
- AUVSI / ONR RobotX Competition FAU-Villanova Team 2014
- AUVSI Robo Boat Competition FAU Team 2013
- AUVSI – Member
- IEEE/OES – Member
- MTS – Member

Experience

Ocean Engineer November 2014 - Present
ASV, LLC. Broussard, LA

Perform duties, which require technical/mechanical support in the areas of training, systems support, installation, development, manufacturing, testing, including establishing procedures and data analysis.

Based on each project's need, I work on determining project requirements, mechanical design and specifications, CAD (SolidWorks), fabrication, wiring and soldering with provided schematics, systems troubleshooting, mechanical systems maintenance (including diesel generators and outboard engines), hardware/software testing, tuning system controllers (PIDs and higher level controls), Offshore operations, hydrodynamic modeling, failure analysis and reports, data analysis, procedure development and general project management (shared responsibility as needed).

Similar Job Roles: Marine / Mechanical Engineer, Mechatronics Engineer / Technician, Project / Product Engineering , R&D

Graduate Student Researcher - FAU ACCeSS Project May 2013 - July 2014
Florida Atlantic University, Ocean & Mechanical Engineering Department

Multidiscipline Graduate Ocean engineering student collaboration to develop a mobile launch and recovery system for a REMUS-100 (UUV) placed on a WAMV-14 (USV). Grant supported research by the Office of Naval Research (Code 33).

Researched and developed a High-level Guidance System for the WAMV-14 USV using Fuzzy Logic to rendezvous with the AUV for the Autonomous Launch and Recovery Mission.

Developed MATLAB/Simulink simulations to test the basic components of the mission controller and Fuzzy Logic Guidance.

Conducted open-water/intercostal testing of the developed high-level mission and guidance controller, along with AUV static docking trials (M. Miranda), WAMV Low-Level controller tests (W. Klinger)

STEM Middle School Magnet Program Teaching Assistant November 2012 - March 2013
Florida Atlantic University, College of Engineering & Computer Science

Provided engineering expertise and mentoring to inspire students to peruse STEM careers using project based learning.

Developed student activities and projects that required applying mathematics along with some basic physics and engineering principles so that students can understand the viable applications of STEM curriculum and careers.

Intern/ Co-Op September 2011 – December 2011
Aerospace Technologies Group

Under minimal guidance or supervision I worked in the Document control Department where my daily duties included,

Scanning and managing company documents, electronic and hardcopy file management of, sales, orders, shipping, engineering drawings and test reports.

Electrician Assistant - Summer Job May 2008 – August 2008
TCE Tech/Tri-City Electric

Under the guidance and supervision of a Licensed Electrician I would assist in the required tasks which included,

Installation of lighting fixtures and electrical sockets, Installation of low/high voltage transformers, Built and installed voltage meters housings for Data/IT centers, Conduit bending and installation for power and data transmission