Scott Sideleau

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SUMMARY

I am a computer systems and software engineer with many hours of operational experience fielding autonomous marine vehicles and providing critical engineering support both ashore and at-sea at various multi-national, NATO-sponsored exercises. Much of my work has focused on the development of interfaces for hybrid control models on Autonomous Underwater Vehicles (AUVs), especially the OceanServer Iver2. My research interests include adaptive oceanographic sampling with marine robots, hybrid heterogeneous marine robot fleet autonomy, and the identification and resolution of Command & Control (C2) operational needs of the US Navy's various marine robot initiatives.

SPECIALTIES

MOOS-IvP interfaces and application development, MOOS-IvP autonomy (i.e. behavior) development, marine robotics, heterogeneous marine robot fleet autonomy, underwater acoustic communications (WHOI Micro-Modem), satellite communications (Iridium SBD on 9601/2 Modem), computer architecture, software engineering, computer programming (C/C++, Python, Java, etc), modeling and simulation (MATLAB, Octave, Python, etc), computer networking, etc.

PUBLICATIONS

The Backseat Control Architecture for Autonomous Robotic Vehicles: A Case Study with the Iver2 AUV

08 / 2010

MTS Journal · Authors: Scott Sideleau, Donald Eickstedt, Ph.D. · http://dx.doi.org/10.4031/MTSJ.44.4.1

In this paper, an innovative hybrid control architecture for real-time control of autonomous robotic vehicles is described as well as its implementation on a commercially available autonomous underwater vehicle (AUV). This architecture has two major components, a behavior-based intelligent autonomous controller and an interface to a classical dynamic controller that is responsible for real-time dynamic control of the vehicle given the decisions of the intelligent controller over the decision state space (e.g., vehicle course, speed, and depth). The driving force behind the development of this architecture was a desire to make autonomy software development for underwater vehicles independent from the dynamic control specifics of any given vehicle. The resulting software portability allows significant code reuse and frees autonomy software developers from being tied to a particular vehicle manufacturer's autonomy software and support as long as the vehicle supports the required interface between the intelligent controller and the dynamic controller. This paper will describe in detail the components of the backseat driver architecture as implemented on the Iver2 underwater vehicle, provide several examples of its use, and discuss the future direction of the architecture.

EXPERIENCE

Naval Undersea Warfare Center Newport 05 / 2007 - Present

Computer Systems & Software Engineer

As a computer systems and software engineer at NUWC, I have primarily been responsible for the development and maintenance of the "backseat driver" interface to the OceanServer

Iver2 AUV for the MOOS-IvP autonomy software. I have participated in cross-departmental Autonomy Strategic Initiatives, served as a Principal Investigator (PI) for autonomy development and automation on an Office of Naval Research (ONR) TechSolutions rapid transition project, served as an Iver2 technical expert for a DARPA-funded project, and completed field work at various multi-national exercises with marine robotic platforms (e.g. BP 09, GLINT 09, REP 10, GLINT 10, TS 11, etc). A former member of the now-defunct Marine Autonomy Group (MAG) in Code 25, I have co-founded the Command & Control Asset Pool (C2AP) to facilitate the use of Code 25's fleet of OceanServer Iver2 AUVs and Robotic Marine Systems SCOUT kayaks across the Center for R&D. I have recently started working with Unmanned Aerial Vehicles (UAVs), specifically the AeroVironment Switchblade, in an effort to solve air-surface-underwater autonomy and communication challenges.

Worcester Polytechnic Institute 08 / 2003 - 05 / 2007

Helpdesk Support Specialist & Student Supervisor

As a student support specialist at the Computing & Communications Center (CCC)'s Helpdesk, I resolved over 5,000 incidents (a student record, at the time) over four school years (part time) and two summers (full time) using BMC's Remedy support resolution software. Problem resolutions by telephone, e-mail, in-person, and by appointment ran the gamut of both supported and unsupported computer hardware/software issues across Windows, OS X, and Linux computers owned by faculty/staff and students. Supervisory responsibilities included training new student employees, organizing morale boosting activities, and interfacing directly with full time support staff on a regular basis.

EDUCATION

University of Rhode Island 2007 - 2008

Ocean Engineering

Graduate courses (Intro to Ocean Engineering [OCE 550 w/ H. Vincent], Intro to Oceanography [OCG 550 w/ R. Pockalny]) completed at the now-defunct Center of Excellence in Undersea Technology (COEUT) as a New Professional at NUWC.

Worcester Polytechnic Institute 2003 - 2007

B.Sc. , Electrical & Computer Engineering

Graduated with Distinction, Specialized in Computer Engineering, Minor in Computer Science, MQP Ireland A06 (project work at University of Limerick), IQP London C06 (project work at Groundwork Thames Valley), CCC Helpdesk (Student Employee of the Year [2nd Place]), Varsity Indoor/Outdoor Track & Field (Co-Captain, All-New England DIII Honors [8th Place, Hammer Throw], Athlete of the Week [21-Jan-2007, Weight Throw]), IEEE

Murdock High School 1999 - 2003

Diploma

Valedictorian, AP Scholar, Academic Excellence (English, Math, History, Biology), National Honor Society (Chapter President), Key Club, Student Council, CDMASC Web Master, Varsity Indoor/Outdoor Track & Field (Co-captain, District All-Star, Coach's Award)

CERTIFICATIONS

IA Technical Workforce (IAT) Level I 01 / 2011

US Navy

Data Center Technical Specialist (DCTS) 02 / 2011
Novell

Certified Linux Administrator (CLA) 02 / 2011
Novell

LPIC-1 01 / 2011
Linux Professional Institute

Linux+ 01 / 2011
CompTIA

A+ Continuing Education (CE) 01 / 2012 - 01 / 2014
CompTIA

A+ 12 / 2010
CompTIA

SPRDE-SE (Systems Engineering) Level I 12 / 2007
DAWIA

ASSOCIATIONS

IEEE (Robotics & Automation Society, Oceanic Engineering Society, Computer Society)

LANGUAGES

- English (Native or bilingual proficiency)
- French (Elementary proficiency)

INTERESTS

Robotics, artificial intelligence, autonomy, automation, computers, hardware, software, latest technology, throwing heavy things far for fun (e.g. Scottish Highland Heavy Athletics, Olympic Track & Field, Amateur Strongman), video games, puzzle games, board games.