

ANDREW C. KING

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WORK EXPERIENCE

University of Hawaii at Manoa – Marine Research Associate Honolulu, HI (01/17 – Present)

- Leads physical oceanography cruises to Station ALOHA with the Hawaii Oceanographic Time-Series (HOT) program: collects salinity samples, manages CTD and associated oceanographic instrumentation to depths >4000 meters, sailed aboard the R/V *Kilo Moana*, R/V *Ka'imikai-O-Kanaloa*, R/V *Hi'ialakai*
- Developed a high accuracy ADCP compass calibration protocol utilizing RTK-enabled GPS resources at marginal cost (< \$200) to the program; efforts reduced error from the ADCP calibration standard from $\pm 2^\circ$ to $< 0.5^\circ$ accuracy
- Formulated a spline-based quality control algorithm to remove translational buoy movement from ADCP velocity data
- Performs mooring deployment and recovery to >4000 meters with Woods Hole Oceanographic Institute

Texas A&M: Geochemical and Environmental Research Group (GERG) – Research Assistant College Station, TX (06/16 – 01/17)

- Managed operation of Slocum G2 AUVs for research applications in shallow and deep Gulf of Mexico missions
- Developed and executes protocols and guidelines to manage ECCN-regulated glider hardware for export control
- Engineered self-priming pump system hardware, and other creative design solutions for subsea and surface gliders

NASA: Johnson Space Center, Attitude Determination and Controls (ADCO) Flight Control: Lockheed Martin Corporation (IMOC II); United Space Alliance (IMOC I) Houston, TX (02/14 – 02/16)

- Utilized GPS satellites, rate gyro assemblies, control moment gyros (CMGs), Kalman filter algorithms for state and attitude determination, vehicle maneuvers, debris avoidance onboard NASA's International Space Station
- Exercised concise communication, time management, and organization in flight control simulations for crew safety, vehicle integrity, and mission success: first responder to guidance failures, faults, and anomalies; onboard ammonia leaks; fire; rapid depressurization
- Coordinated procedure updates to ISS thruster pulse pattern procedures for CMG desaturation, MCS command build uplinks for momentum management and attitude hold control algorithms

Pike Powers Laboratory – Engineering Intern Austin, TX (10/13 – 12/13)

- Utilized PHP and Apache to construct a RESTful API based on ASHRAE "BACNet" protocols to network 11 A/C units
- Managed participant solar data through MySQL, Python, and Salesforce to monetize home energy usage big data

Multiscale Thermal Fluids Lab (MTFL), UT Austin – Graduate Researcher Austin, TX (05/12 – 08/13)

- Measured and managed nano-liter fluid volumes to create microfluidic photo-signals via plug flow
- Utilized high accuracy optics, MATLAB image processing, signal analysis to create a microfluidic flow rate detector
- Utilized SolidWorks, photolithography to design and fabricate a highly repeatable 300 x 100 μm micro-channel

On Air Solutions, Inc. – In-Building Wireless Engineer Houston, TX (02/11 – 07/11)

- Designed distributed antenna system (DAS) bids typically over \$50,000 per project, select projects over \$100,000
- Led customer-facing on-site surveys to determine installation locations for antennas, fiber-optic relays, cable drops
- Frequently traveled to generate turn-key solutions for government, municipal, and commercial installations

EDUCATION

University of Texas at Austin, M.S.E., B.S. Mechanical Engineering (August 2013, May 2010)

TECHNICAL PROFICIENCIES AND SKILLS

Software Proficiency: MATLAB, LabVIEW, SolidWorks, NX, Thermal Desktop, COMSOL

OS and Programming: Windows, Mac OS X, Linux Ubuntu, C++, Java, HTML5, Python, PHP

Sensors and Instruments: RDI ADCPs, CTDs, thermocouples, RTDs, strain gauges, accelerometers, ring laser gyros, stepper motors and servos, PID controllers, pumps, metrology

Machining and Fabrication: Lathe, mill shop certified UT Austin; water jet; 3-axis CNC; MasterCAM and G-Code; Class 1,000 cleanroom experienced; photolithography and PDMS-based soft lithography; forklift certified

At-Sea Experience: R/V *Ka'imikai-O-Kanaloa* (UH Manoa), R/V *Kilo Moana* (UNOLS), R/V *Hi'ialakai* (NOAA); Total time at-sea: > 45 days