JOHN THEODORE REINE
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EXPERIENCE

Aquatic Labs Cambridge, MA
Ocean sensor + eDNA sampler startup
Head of Product ***Sep 2024 - Sep 2025***

- In charge of R+D and support for a team of 8 Engineers and 2 Scientists in efforts to build multiple prototypes and find market fit for novel chip scale Alkalinity sensors.
    - Built 5 prototypes for the pool industry deployed at local testing sites
    - Moved from 'pile of wires' to a reliable finished product housing for delicate chip based sensor
    - Lab testing of sensor chip and algorithm development.
- Facilitated creation of specifications, put together timelines and budget and led electrical and mechanical teams to design and build SoloPuffer, a handheld 1000m eDNA sampler while maintaining compatibility and the same API as the MultiPuffer product.
- Supported customer ROV integrations and cruises for eDNA sampler product family.

Woods Hole Oceanographic Institute Woods Hole, MA
Ocean Observatories Initiative, CGSN 2017-2024
Electrical Lead, Senior Engineer ***Oct 2018 - Aug 2024***

- Ran OOI Electronics Lab refurbishing electronics and supporting integration and software efforts for Pioneer, Endurance, Irminger and Papa OOI Arrays., supervised 7 people.
- PI for own underwater robot Open Source Glider project, raised $175k via internal WHOI awards (Pitchathon and Tech Awards), mentored local high school students who helped to develop and test the glider prototype.
- Electrical Lead for Open Source Autonomous Boat project (ASIMOV), created and tested an autonomous ocean ready boat to 'mow the lawn' of the ocean carrying a magnetometer for a Geologist at WHOI.
- Conceived of using Analog A2B bus for multiple hydrophone systems on Buoy riser and in directional arrays, helped to raise money and put together a team to build a working deployed prototype.
- Electrical + Software Lead for 3D Acoustic Telescope, a directional passive listening 'telescope' 10 meters wide with 5 arms recording 28 hydrophones. Successfully deployed as center piece for a large acoustic experiment around sea-mountains in the Atlantic Ocean.
- Electrical + Software Lead for 3D-VHA, a small trapezoidial directional passive listening buoy for wind farm monitoring. Successfully utilized over multiple deployments monitoring the ocean soundscape before and after the installation of over 50 Wind Turbines.
- Designed and implemented PSC 2.0 (Power System Controller), an update to the power system in OOI Surface Moorings that increased up time by 25% and reduced failure rate.
- Analyzed 8 years of 1 minute resolution engineering data in R to optimize power generation,

reliability and power capacity for additional sensors and instruments. Turned analysis into a multi-year strategy for increasing uptime by improving power efficiency.
- Created and led the "Dual Power Supply 2" project that reduced mooring power consumption by 30% on buoys, increased longevity of batteries and reduced "catching on fire" rates down to 0.
- Continuous upgrades and fixes of buoys and subsurface moorings to improve reliability and handle part obsolescence in a 25 year program.

Research Engineer ***May 2017 - Oct 2018***

- At OOI we had a problem tracking inventory in a unique way. We built buoys out of expensive parts, deployed and recovered them, then we disassembled them and refurbished all the parts. Traditional MRP systems did not work for tracking inventory in this circular way. I designed and implemented Roundabout DB, a web based inventory tracking database for deployed assets, keeping a history of all the important parts. This is now a crucial part of OOI and other labs at WHOI.
- Cataloged all scattered firmware code versions and added them to a source code repository, created coding standards, put in place processes, issue tracking and versioning systems.
- Managed daily work of lab technicians, debugging hardware and software and responding to mooring issues at sea.
- Designed and tested heater array to prevent snow and ice buildup on buoys in arctic waters and successfully deployed it to a mooring in the Irminger sea.

HEARGLASS Inc. NY, NY

Wearable Tech/Hearing Assistance startup 2014-2017

Software & Hardware Engineer

- Wrote embedded code to control novel directional hearing aids built into glasses using analog electronics that can pair to phones.
- Created an IOS app that controls devices over Bluetooth and ported to Android.
- Developed settings syncing through phones for rapid prototype development amongst beta testers.
- Helped with all product development including hardware design, schematic reviews, 3D design, manufacturing of prototypes, usability and fundraising.

VICARIOUS VISIONS, INC. Menands, NY

An Activision game development studio 2009-2013

Software & Hardware Engineer

- Prototyped *Guitar Hero* on iPhone resulting in the development of a commercially available game.
- Worked on designing and prototyping next generation guitar for Guitar Hero with China factories.
- Build Support Engineer on *Skylanders: Swap Force* for all gaming consoles and improved technical support for artists and musicians.
- Supported and maintained continuous integration and testing system.
- Created and designed generations of working prototypes for *Swap Force* characters and received patent for magnet/inductor connector with RFID, worked with China factories on manufacturing.
- Conceived of, prototyped and received a Patent for playing *Guitar Hero* in Java on BluRay players.
- Redesigned the processes for musicians to encode gems for different levels and instruments, saving encoding time and QA.

REQUEST, INC. Ballston Spa, NY 1997 -2008

Founder & Board Member of high-end home-entertainment systems company

Product Development and Interface Manager 2001-2008

- Spearheaded migration from direct consumer sales to CEDIA distributed sales, expanding sales network by 100% and shifting strategic focus to high-end niche.
- Developed and implemented third-party Crestron and AMX interfaces to control “AudioReQuest,” enabling entry into the high-end CEDIA market.
- Negotiated deals with CEDIA Control Systems manufacturers to promote and sell product, quickly expanding our dealer base.
- Conceptualized and executed new product “IQ”, an innovative, multi-zone whole house audio system.
- Conceptualized and executed new product VideoReQuest, a DVD storage and playback system.
- Designed and wrote user interfaces in Javascript, Flash AS3, and Objective C for iPhone.
- Designed first-ever classical music interface, allowing browsing by Composer and Performance, and for the first time in history the ability play an entire Performance nonstop.

Sales/Support/Product Development 2001-2008

- Cultivated relationships with dealers and salespeople through multiple in-person visits, securing long-term sales contracts and building the ReQuest brand.
- Became public identity of company through international dealer/installer trainings, on-demand. high-level support, and interaction with press events, panels and TV interviews.
- Scaled up in-house manufacturing to 5k units per year.

Founder/President 1997-2001

- Built a networked MP3 player in my college apartment.
- Started ReQuest Inc. with college roommate, won RPI's $25K student business plan competition.
- Raised initial seed investment of $250k from local venture capital firm and secured second round funding of $1.25M from angel investor.
- Conceptualized and led effort to make "ArkLink", a central location all products checked in on for remote debugging and software updates.
- Built and designed initial AudioReQuest prototype and built first production run of 250 units.
- Setup in house manufacturing with automated testing.
- Received patent for “Netsync,” a key market differentiator by which customers can synchronize music and movies among multiple homes. Sold patent to Samsung in 2012 for $4.5M and with the proceeds all of ReQuest investors got all their money back plus a bit of interest.
- Won multiple awards including: 2004-2005 *Inc. 500* Fastest Growing Private Company, $100k Tech Valley Business Plan competition winner, 2002 CEDIA Product of the Year.

EDUCATION

RENSSELAER POLYTECHNIC INSTITUTE Troy, NY

Bachelor of Science, Electrical Engineering, June 1996 1992-1996

PATENTS

Reine, Leyland, “Devices and methods for pairing inductively-coupled devices”, United States Patent, No. 8894459B2.

Reine, Bala, “Music game software and input device utilizing a video player”, United States Patent, No. 20120071238A1.

Reine, others, “Multimedia synchronization method and device”, United States Patent, No. 20120071238A1.

CRUISE PARTICIPATION

Electrical Lead, 3DAT RR2408, June 14, 2024
Electrical Lead, 3DAT AR38B, May 9, 2024
Electrical Lead, 3D-VHA South Fork Leg1, June 23, 2023
Electrical Lead, 3DAT AR72, April 20, 2023
Electrical Lead, 3D-VHA Test Cruise, April 4, 2023
Electrical Lead, OOI AR71-04, Feb 20, 2023
Electrical Lead, OOI AR57, June 7, 2021
Electrical Lead, OOI AR52, March 27, 2021
Trainee, AR24, Oct 27, 2018
Trainee, AR28, Leg 2, March 24, 2018

SKILLS

- Software: embedded C, C++, Objective C, IOS development, Unity3D, embedded development, Ardupilot, embedded linux development
- Hardware: Schematic design, PCB Layout, Kicad, embedded systems design and prototyping, CAN, Bluetooth, PIC, Atmel, , RFID, PX4 Flight Controllers, JTAG