Nathan Vander Wilt

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Recent work

Freelance software developer *2012–present*
Project leadership role in the design, architecture, and implementation of software products. Clients have included:

2017 [NOTE: dates approximate, some projects spanned multiple years]

Inquirium, an educational software consultancy — webapp lead for redesign of UChicago Impact's "5Essentials" survey analytics tool (**React.js/redux/reselect** frontend using **ES2015** syntax, **interactive SVG** data visualizations, **Django** views, **Python** data processing)

AstroHQ, the company behind the Astropad tablet software for iPad — project details withheld pending permission (**x86-64 disassembly**, **DTrace**, **kernel driver development**)

Pacific Northwest National Laboratory, a Department of Energy research facility — staff augmentation for IT user experience improvements (**Linux/Apache/PHP** deployment, **shell scripting**, **macOS app development**/debugging in **Swift**, macOS internals and **AppleEvent scripting** interfaces, enterprise wireless **network configuration**, **documentation** and **source control** assistance)

2016

Flex Rental Solutions, providing inventory management for the A/V industry — helped finish an in-progress iPad/iPhone app release after its original developer left (**debugging**, **Objective-C**, **iOS** development, working with **other people's code**)

TiLite, makers of custom-fit titanium wheelchairs — worked through &yet with a small team on a tight deadline to develop a cutting-edge iPad app and server API, including physical prototyping (**user experience**, **R&D**, **OpenCV**, **Swift/C++** integration, **JavaScriptCore**, **teamwork**)

AstroHQ — licensed a macOS multitouch library to them and helped integrate into their iOS and Mac apps with some improvements (**macOS HID internals**, **Objective-C**)

Recent work, cont'd.

2015

Filament, inventors of secure wireless network devices — helped test IoT hardware prototypes via custom firmwares developed, provided feedback/troubleshooting/documentation on an early Telehash implementation (**embedded ARM** development, **electronics** rework, **protocol development**, **RF** testing, **documentation**)

Inquirium — frontend developer for UChicago's "To&Through" data browsing tool from initial implementation and through a significant later revision (**architecture**, **custom Django middleware**, develop **Django template addons** for **SVG generation**, **jQuery/Bootstrap/LESS** frontend, **refactoring**)

2014

Viking Digital, manufacturer of electronic "modchips" for gamers — built an API for storing/sharing data from an online editor tool, built system for integrating website to physical controllers via a cross-platform app, extended MCU bootloader to support encrypted updates to help protect client IP (**node.js**, **CouchDB**, **Electron** precursor native app, **binary data formats**, **USB driver** and **embedded PIC** development, **cryptography**)

Technical Machine, creators of the Tessel JavaScript IoT platform — helped port NRF24 wireless transceiver to Tessel platform, implemented SD Card and FAT32 filesystem driver from scratch, implemented JS-conformant Unicode behavior for Lua transpiler system, helped build system for remote code deployment and workaround wireless network chip issues (**node.js hardware drivers**, **embedded ARM** development, **Unicode**, **networking protocols**)

2012–2013

Argyle Tiles, personal startup — began processing aerial imagery and built a service to host unified "slippy map" tiles from multiple data sources, promotion and market research (**node.js**, **image processing**, **GDAL**, cartographic **projections**, **public datasets**, **Amazon Web Services**, **marketing** and **intern mentorship**)

Meograph, a four-dimensional storytelling startup — assisted with some web map expertise, re-architected multi-faceted media player for more stable playback, worked around Google Earth and YouTube player integration issues (**CoffeeScript**, **collaboration**, **integration**)

Inquirium — primary developer and design contributions to several iterations of Project READI's "SenseMaking" app for reading/notetaking (**CouchDB** and **node.js** backend, **D3.js** frontend, **low-level DOM** manipulation in support of student highlighting, many **CSS** tricks and **mobile web** multitouch compatibility)

Prior positions

Room to Think - Treasurer *2012–2014*
Board member on the Tri-Cities' first coworking space, organized as a not-for-profit collective.
Maintain books and accounts payable/receivable, guide future direction of community.

&yet - Senior Developer, Interim CTO *2010–2012*
Led web/iPhone team for major client in the location tracking and telemetry industry.
Researched and developed libraries in support of realtime single-page web apps.

Calf Trail Software - Co-founder *2008–2010*
Designed, developed and supported several independent Mac shareware products. Authored
company website and blog. Guided graphic design and iPhone development.

NOAA/NWS, Orion Network Solutions - Subcontractor *2006–2007*
Automated map generation for display of current and static hydrology datasets.
Implemented geometry and labeling algorithms in support of basemap generation.

Dordt College Technical Support Services - Workstudy *2003–2006*
Facilitated sound, lighting and projection for twice-weekly chapels. Recorded concerts in
auditorium. Operated live video cameras. Stage managed and set up special events.

Inspiration Hills Summer Camp - Videographer/Worship Leader *2004-2005*
Filmed and produced videos on weekly deadlines. Coordinated chapels and led singing.
Maintained facility's computer systems.

Institutional education

Bachelor's Degree - General Metaphysics (graduated a year early)
Dordt College, Sioux Center, Iowa (May 2006)

Speaking opportunities

MakerLand 2016 (Seal Rock, OR) — "Workshop: All About Radio", an introduction to RF
communication fundamentals and Software Defined Radio

CascadiaJS 2013 (Vancouver, BC) — Building apps with D3.js
"D3 is well-known as an SVG visualization library, but can provide a powerful platform for
building entire DOM-aware frontend applications."
video: https://www.youtube.com/watch?v=hhSlX_r7GZA

Apache CouchDB Conf (Vancouver, BC) — Personal Web Apps
"CouchDB is great at keeping track of all sorts of personal data — everything from notes and
contacts, to sharing a live stream of photos from a balloon 250 feet above a construction site.
I'll demo of some of the more interesting apps I've been building for my 'personal cloud' and
talk about the CouchDB features which make them easy. We'll also explore what CouchDB
doesn't do and how to get those things done anyway."
video: https://www.youtube.com/watch?v=4QttTEbQ_1I
slides: http://n.exts.ch/2014/02/couchconf_slides

Speaking opportunities, cont'd.

State of the Map US 2012 (Portland, OR) — Building the Other Tab: Satellite Maps for Your App
"Take a behind-the-scenes look at how we made Argyle Tiles, a tile service hosting a remix-friendly global satellite/aerial map layer. Get an overview of what it takes, learn which datasets and tools we use, and explore how you could build something like it on your own."

TriConf 2012 (Richland, WA) — Shipping tips: Habits, Strategies, Tactics (and Reasons) for shipping software.

CouchConf 2012 (Portland, Seattle) — Scaling geodata with MapReduce
"While Couchbase's support for spatial indexing is a powerful feature, certain geodata patterns fit well within the MapReduce paradigm. We'll look at some example views that stretch the potential of a single-dimensional index (and leverage its scalability) for geographic datasets. We'll also spend little time looking in the opposite direction: reasons to use a spatial index for non-geographic data."
slides: http://n.exts.ch/2014/02/couchconf_slides

Activities and interests
My current office is the cabin of a 30' wooden boat, which I am restoring in my backyard. I earned my "Amateur Extra" radio license in 2015 and have recently started studying for the GROL. I read a lot and enjoy writing as well. My wife and I are active in our local church. I enjoy doing projects in the garage and/or electronics workbench with our three sons. We also dabble in gardening (with chickens, rabbits, fish and even snails and crickets), a variety of music, balloon aerial photography, boating and camping and occasional travel.