

Jefferson R. Heard

Co-founder & CTO, 365 Pronto, Technologist, Polymath, Software Developer

jefferson.r.heard@gmail.com • 919.308.7536 • 3926 Swarthmore Rd Durham, NC 27707

Website: <https://jeffersonheard.github.io>

Personal Statement

I bring 2 decades of software development and startup experience to all projects I work on. I differ from the traditional developer; beyond simply solving the problem, I try to personally understand my users and build and bring to market things they need-to-have in the way they need it presented to them.

Skillset

- **Entrepreneurship & Leadership:** Served as CEO and CTO in two startups, handling all technical leadership, significant portions of business model development and thought leadership.
- **Software Development (used in the last 2 years):** Familiar with over 40 languages and all major software dev paradigms. Most recently Python, Java, Javascript (incl ES2015).
- **Systems Programming:** iPhone, Android, Linux, Mac OS X
- **Database Experience:** MySQL, Postgres, PostGIS, iRODS, MongoDB, RethinkDB
- **Application Frameworks:** ReactJS, NPM/Node, Cordova, Django, Flask, Bootstrap, Leaflet

Selected Open Source Projects from <https://github.com/jeffersonheard>

- **Sondra** - <https://github.com/jeffersonheard/sondra>. Innovative object persistence layer (ORM) and API designed for consistency, predictability, ease of use, and speed.
- **Terrapyn** - <https://github.com/jeffersonheard/terrapyn> - CMS for geospatial data, including OGC standard web service APIs for your datasets widely used internally at UNC.
- **Hydroshare** - <https://github.com/hydroshare> - Data and model sharing and persistent publishing for the hydrologic research community. **Lead architect and developer** on an 8 university consortium project.

Education

M.S. in Computer Science GPA: 3.9. Illinois Institute of Technology, 2012, Advisor: Ophir Frieder

Employment

Cofounder & CTO, 365 Pronto (2015-Present) • <https://www.365pronto.com>

A labor--on-demand service for the renewables industry. As in all startups, my role at 365 Pronto is fluid. However, from a technical point of view, I brought the website and product online, created the demo and product, handle software lifecycle, and keep the cloud running.

Founder & CEO, TerraHub (2013-2015)

Two partners and I commercialized my open source project, Terrapyn. We built partnerships in the solar-power industry to develop a TerraHub offering to project manage utility scale solar projects.

Senior Research Scientist, RENCi (2006-2014) • <http://www.renci.org/>.

I have played many roles at RENCi, from data scientist to visualization researcher to project leader. My highest profile roles were as lead technologist on two core projects involving the multi-university Water Science Software Institute (WSSI) and Hydroshare, a multi-year, multi-university project to develop the next generation hydrologic information system for a global research community.

CTO, Intranet Mediator, Inc (2004-2006)

Implemented patented research as commercial ready software, and partnered with several non-profit organizations to apply the Intranet Mediator technology towards dynamic, difficult search corpuses.

Axiom Corporation. Senior Software Developer (2000-2004)

Overhauled the Infobase build process to go from requiring a dedicated, very expensive, custom built Compaq server to run on commodity hardware in 1/10th of the time (from 30 days to 2.8 days).

Introduced declarative programming to data modeling, allowing product engineers to prototype new data elements and test them in situ in the build without going through an extra coding step.

Consulting Clients

International Executive Service Corps (2016) - Created a presentation-quality data map, "Financial Inclusion in Lebanon: MFI Branch Network and Nationwide Refugee Impact" that shows the distribution of refugees in Lebanon compared to the presence of microfinance institutions (MFIs). *[Information Visualization] Turnaround time: 8 days*

Project Experiences

Ongoing design and refinement of Renci's Terrapyn Framework, cyberinfrastructure for geographic curation, analytics, and visualization. Geoanalytics is currently deployed at RENCi, NCSU (2 installations), and is being deployed as part of Hydroshare.

<http://geoanalytics.renci.org> .

<http://geoanalytics.renci.org/dev/wp-content/uploads/2011/09/FOSS4G-poster-production.pdf>

Technical and design lead on the WxEM project, a collaborative agreement between RENCi and the National Weather Service. Our mission was to prototype new tools and products for the NWS that would be tested in the field with emergency managers around NC with the ultimate vision of creating a testbed for Decision Support.

Technical and design lead on the R3ZAR sensor grant (NSF). The R3ZAR grant's mission is to create dynamically programmable sensor systems that can be used at a high level by people outside of computer science.

Technical and design lead on the Gillings Farmers Market Locator grant (Gillings Institute), a project to prototype and determine the requirements for a "commercial GIS"-type system to aid nonprofits interested in placing new farmers markets around North Carolina.

Technical and design lead on the CI-BER project, a collaborative agreement with the National Archives and Records Administration. The project is about scaling data and visualization systems to browse billions of online electronic archival records.

<http://geoanalytics.renci.org/uncategorized/scalable-visualization-of-geographic-archival-records/>

Conceived of and wrote The Big Board, a "teleconferencing system for maps" (now part of TerraHub) aimed at emergency managers and other professionals where being able to collaborate in real time on the same virtual surface is more important than face-to-face or PowerPoint contact available in traditional teleconferencing systems.

<http://geoanalytics.renci.org/applications/the-big-board-teleconferencing-over-maps/>

Design and implementation of the Geoanalytics-based backend for the IEI Commons space in the Hunt Library. <http://www.ncsu.edu/iei/index.php/about/hunt-library-emerging-issues-commons>

Designed and wrote the UNC grants visualization and UNC giving visualizations, map based visualizations meant to show the broader impact of UNC spending and the geographic diversity of

contributions to the university. <http://www2.renci.org/~jeff/software/unc-giving/>

Wrote and maintained AVL, a vehicle-tracking system with self-describing and configuring sensors (such as camera, audio, temperature, etc) for tracking emergency management vehicles and personnel and giving them the tools to collect data for situational awareness for an EOC. Currently deployed on several vehicles at the Chapel Hill fire department and NC State Highway Patrol as part of an extended test.

Conceived and developed the Docuverse, a 3D interactive visual text mining system for large collections and the World Wide Web. <http://vis.renci.org/jeff/2009/01/19/the-docuverse/>