Benjamin J. Kruger

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Selected Work History

2015 **Summer Research Intern** **DePauw University,** Greencastle, IN

Worked on a team to build a web-based IDE for teaching functional reactive programming with a custom built media computation library for Scala. Project made use of JavaScript, HTML5, CSS, Bootstrap, WebAudio API.

Poster, Live Website, Source Code[1]

2013 **Summer Research Intern** **University of Central Arkansas,** Conway, AR

As part of a team team that built a browser-based tool for automated border detection to aid in melanoma diagnosis--using parallelized density-based clustering that led to a publication, I created the UI, implemented data visualization and authored user and developer documentation. I also led the team in the adoption of version control eliminating weekly integration meetings and handled any Git and/or problems on-call.

Poster, Publication, Source code and documentation available upon request.

Education

2017 **B.S. in Computer Science** **Northeastern State University,** Tahlequah, OK

- Graduated magna cum laude (3.78 GPA)
- Minor: Mathematics

Selected Projects

2016 **C Spot Run: A web-based environment for developing and using teaching languages for novice programmers**

Created a programming language toolkit using JavaScript, PEG.js, and D3.js with a UI built on the Foundation framework and GitHub/Gist integration, which I used to design, implement and document the c.run "c spot run" programming language. Followed test-driven principles with Chai and Mocha on Node.js.

SIGCSE 2016 Poster, SIGCSE 2016 Abstract, c.run Language Reference

2017 **τ-factorization over integral domains**

Upon eliciting user requirements, I used Python (3.6), PyCharts and OpenMP on the Stampede HPC Cluster to help a mathematics professor investigate and visualize aspects of a specific kind of factoring in number theory.

Live Website, Source Code

2015 **GCHQ's Christmas Grid-Shading Puzzle**

Implemented an open-source web version of a grid shading puzzle from GCHQ's Christmas card.

Live Website, Source Code

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[1] *If viewing printed document, see www.benkruger.me/resume.pdf for active links.*