

SCOTT EMMONS

101 RALEIGH STREET ROOM #118, CHAPEL HILL, NC 27514

PHONE: (812) 606-7839 | EMAIL: SCOTT@SCOTTEMMONS.COM | WEBSITE: SCOTTEMMONS.COM

EDUCATION

University of North Carolina at Chapel Hill

Bachelor of Science, *Mathematics and Computer Science*, GPA 4.0/4.0

Expected May 2019

RESEARCH INTERESTS

Network analysis * complex systems * community detection * algorithms * information theory * visual analytics * information visualization * online learning dynamics * scientometrics

RESEARCH EXPERIENCE

Cyberinfrastructure for Network Science Center, Indiana University

Bloomington, IN

Research Intern

September 2013 - Present

- Collaborated on international research project to map scientific publication
- Analyzed massively open online course data to empower students, teachers, researchers, and platform developers of massively open online courses
- Designed studies using statistical computing and visual analytics to advance the fields of network science and online learning dynamics
- Wrote up published results of experiments to communicate key findings to the scientific community
- Optimized computational experiments on supercomputer via parallel programming for 100x speed increase
- Led independent research project to map consumer purchasing behavior
- Developed interactive visualizations for users explore data and make new discoveries
- Reviewed MIT Press books *Visual Insights: A Practical Guide to Making Sense of Data* and *Atlas of Knowledge: Anyone Can Map* to teach sophisticated visual analytics to a general audience
- Created geospatial map to showcase the research center's impact around the world

Carolina Center for Applied Mathematics, Mucha Group, UNC

Chapel Hill, NC

Undergraduate Researcher

November 2015 - Present

- Presented research ideas to foster group collaboration
- Studied graduate-level network science coursework in reading group to build the group's collective, foundational knowledge

Arnosti Laboratory, Department of Marine Sciences, UNC

Chapel Hill, NC

Research Assistant

October 2015 - February 2016

- Developed interactive software for the hierarchical visualization of microbial community composition data used in making oceanography discoveries
- Programmed scripts that automated supercomputing workflows for DNA sequencing and increased the research lab's operational efficiency

Graph and Map Algorithms Group, University of Arizona

Tucson, AZ

Visiting Scholar

December 2014 - January 2015

- Collaborated directly with Dr. Stephen Kobourov to design study answering previously unresolved questions in the field of network science
- Implemented computational experiments on 4 algorithms and 6 metrics that can be applied to research in disciplines ranging from the social sciences to the biological sciences

PROFESSIONAL EXPERIENCE

Robertson Community Coordinators, Robertson Scholars Leadership Program

Chapel Hill, NC

Service Committee Member

August 2015 - May 2016

- Organized volunteer opportunities that drove civic engagement amongst Robertson Scholars
- Oversaw logistics and funding for 2 community service projects that improved living conditions in Durham and Chapel Hill

Sparq Creative Solutions, LLC

Bloomington, IN

Cofounder and Owner

December 2013 - December 2015

- Created strategic plans, brand identities, logos, and websites to grow local businesses
- Consulted with clients to identify needs and plan projects to meet business objectives
- Formulated contracts and closed sales deals aligning with client goals
- Identified independent contractors with relevant expertise to exceed client expectations
- Executed internal business operations by keeping the books, filing taxes, and coding company website to continue offering efficient, high-quality services

TEACHING AND MENTORING EXPERIENCE**Sunflower County Freedom Project**

Sunflower, MS

Teaching Assistant

May 2016 - July 2016

- Developed standard-aligned 8th- and 9th-grade math curriculum designed for low-performing middle school students who sought over the summer to enrich their education
- Taught two math classes that saw an average increase in performance of 9% on state standard test
- Developed a three-day coding seminar for middle school students that used active learning with puzzles to introduce the fundamentals of computer science
- Created spreadsheet framework that will form the basis of future data analytics at the Freedom Project
- Led fitness group in dieting and exercise that resulted in average mile time decrease of over 60 seconds

Life Skills Academy

Bloomington, IN

Cofounder

January 2014 - May 2015

- Negotiated terms with school principal to run program 3 times a week during the school day and help students at risk of failing to pass core, academic classes required to earn a high school diploma
- Oversaw development of “life skills” in 25 mentor-mentee pairs to support classroom achievement

Information Visualization Massively Open Online Course

Bloomington IN

Student Liaison

Spring 2014, Spring 2015

- Facilitated online discussion of nearly 2,000 enrolled students from over 50 different countries to augment the material taught during lectures
- Reviewed student-facing materials such as examinations to ensure that online coursework maintained the high-quality of an in-person university class

PUBLICATIONS AND PRESENTATIONS*Publications*

- **Scott Emmons**, Robert Light, & Katy Börner: “MOOC Visual Analytics: Empowering Students, Teachers, Researchers, and Platform Developers of Massively Open Online Courses.” *Journal of the Association for Information Science and Technology (JASIST)*, Submitted.
- **Scott Emmons**, Mike Gallant, Stephen Kobourov, & Katy Börner: “Analysis of Network Clustering Algorithms and Cluster Quality Metrics at Scale.” *PLoS ONE*, 2016.

Oral Presentations

- **Scott Emmons**, Robert Light, & Katy Börner: “MOOC Visual Analytics: Empowering Students, Teachers, Researchers, and Platform Developers of Massively Open Online Courses.” Interactive Intelligent Systems Open House. Bloomington, IN, 2015. **Best Presentation Award**
- **Scott Emmons**, Robert Light, & Katy Börner: “MOOC Visual Analytics.” Cyberinfrastructure for Network Science Center Open House. Bloomington, IN, 2014.
- **Scott Emmons**: “Mapping the Consumer Product Space.” Cyberinfrastructure for Network Science Center Open House. Bloomington, IN, 2013.

AWARDS AND HONORS*Academic*

- Robertson Scholars Leadership Program, highly selective undergraduate merit scholarship providing unique “dual citizenship” at UNC and Duke University, leadership development workshops, and funding for three summers, 2015-2019, \$250,000

- National Merit Scholar, chosen among top 0.6% of PSAT test takers, 2015, \$2,500
- Honors Carolina, selected as top 10% of incoming UNC class, 2015-2019
- Honorable Mention Paper, M³ Math Modelling Challenge of the Society for Industrial and Applied Mathematics, among top 6% of submitted papers, 2015

Competitive

- 4th in nation and 2x state champion in case competition, Business Professionals of America, 2013-2014
- 10th in nation, computer programming concepts, Business Professionals of America, 2013
- 2x state champion, financial math and analysis, Business Professionals of America, 2013-2014