SONIC Data Science Internship Opportunities Fall 2021

Course Credit:
Research Practicum registration #: 389 (COMM_ST) or
Independent Study registration #: 399-0 (IEMS), 399-0 (CS) or 499-0 (CS)

Duration:
Fall 2021 (possibly extendable to subsequent quarters)

Location:
In person for meetings, Remote otherwise

Organization Overview:
The Science of Networks in Communities (SONIC) research group advances social network theory and methodology through the development of cutting-edge techniques to understand and enable networks in diverse communities. For more information, please visit
http://sonic.northwestern.edu/about

Internship Opportunities:
SONIC is excited to offer 7 internship opportunity this quarter:
- Science of Science Data Science Intern (1)
- Enterprise Social Media Data Science Intern (2)
- STRONG Data Science Intern (1)
- TEAMSTaR Data Science Intern (1)

Details and descriptions for each position are below.

Requirements:
Data Science Internships are open to current undergraduates or graduate students enrolled in an accredited degree-seeking program at Northwestern. Candidates must be able to demonstrate attention to detail, proficient writing/communication skills, analytic thinking, emphasis on deadlines. Many projects require candidates to have at least basic knowledge of programming or statistical software. For project specific requirements and preferences, see descriptions below.

Application Instructions:
To apply, please send your materials to the responsible person listed in the flyers below. For general questions about the internship and the SONIC research group, please contact our lab manager, Arshya Srinivas at arshyasrinivas2021@u.northwestern.edu. Thank you.

RESEARCH OPPORTUNITY:
Science of Science
Data Science Intern

Organization Overview:
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Description:
This is a social network analysis and text analytics internship The intern will work with a research team on (1) identifying scientists' prior collaboration networks, (2) decoding scientists' areas of expertise using text analytics tools for mining the text contained in scientific publications, (3) running social network analyses to understand the factors that determine effective scientific team assembly and collaboration.

Required Qualifications:
This position is open to current undergraduates or graduate students enrolled in an accredited degree-seeking program at Northwestern. Successful candidates typically have an experience with programming languages.

Some additional requirements include: 1) Interest in studying scientific collaboration, teams, and social network. 2) Interest in gaining data science experience (from data pre-processing to creation of knowledge) 3) Proficiency in R, Python, and SQL. 4) Experience with network analysis.

Departments: CS
Education level: Undergraduate Seniors or Masters students

Preferred Qualifications:
Ideal candidates will have a strong interest in social science research and experience with Python, SQL, and/or the R programming language. Prior experience with research and knowledge of social network analyses and text analytics tools is preferred.

Application Instructions:
Please send a resume and brief cover letter describing your interest in the position to Alina Lungeanu (alina.lungeanu@gmail.com).

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Description:

The research project advances the theoretical understanding on human-autonomy (robots or AI agents) teaming. The data science intern will work to analyze survey, transcript (text), and video data from online experiment involving human-autonomy teaming. The data science intern will investigate the processes and properties that predict success in human-autonomy teams.

Required Qualifications:

This position is open to current undergraduates enrolled in an accredited degree-seeking program at Northwestern. Successful candidates typically have an experience using the statistical programming language R.

Preferred Qualifications:

A strong preference will be given to undergraduates who have (1) an experience with data analysis, and (2) prior experience with Social Network Analysis or have taken IEMS 341/COMM_ST 395

Application Instructions:

Please send a resume and brief cover letter describing your interest in the position to Arshya Srinivas (arshyasrinivas2021@u.northwestern.edu)

RESEARCH OPPORTUNITY: Enterprise Social Media Data Science Intern

Organization Overview:
The Science of Networks in Communities (SONIC) research group advances social network theory and methodology through the development of cutting-edge techniques to understand and enable networks in diverse communities. For more information, please visit http://sonic.northwestern.edu/about.

Description:
The project aims to understand how communication technologies enable collaboration during the sudden workplace disruption caused by COVID-19. Intern responsibilities include: (1) generate organizational reports by visualizing correlations and drafting strategy recommendations; (2) implement statistical models to understand how communication patterns among employees can predict individual outcomes (e.g., performance).

Required Qualifications:
This position is open to current undergraduates enrolled in an accredited degree-seeking program at Northwestern.

Some additional requirements include: 1) Proficiency in R and Jupyter notebook 2) Interest in communication and relationship networks within organizations

Departments: MMSS, IEMS, COMM_ST

Preferred Qualifications:
(1) Interest in writing research papers (2) Prior experience in social network analysis (e.g., ERGMs, SAOM, ALAAM) is strongly preferred.

Please send a resume and brief cover letter describing your interest in the position to Jasmine Wu (jasminewu@u.northwestern.edu).

RESEARCH OPPORTUNITY:
Enterprise Social Media
Data Science Intern

Organization Overview:
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Description:
The project aims to understand how technology (e.g. Zoom, Slack, Teams) can enable collaboration during sudden workplace disruption caused by COVID-19. Research will examine sources of survey and digital trace data from multiple organizations to understand what teamwork looks like during COVID-19 and the near future of work. Intern responsibilities include: (1) data cleaning; (2) statistical analysis (e.g., ERGMs, machine learning), (3) and reviewing existing papers to uncover how communication patterns among employees can predict the relationship within and between teams.

Required Qualifications:
This position is open to current undergraduates enrolled in an accredited degree-seeking program at Northwestern.

Some additional requirements include: 1) Prior experience working with R or other programming languages 2) Interest in learning about social network analysis

Department: CS, IEMS, MMSS, COMM_ST, or other departments

Preferred Qualifications:
Interest in social networks research, and/or applying data science to understand human behavior.

Please send a resume and a brief cover letter describing your interest in the position to Brennan Antone (williamantone2017@u.northwestern.edu)

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Description:
As NASA sets its sight on more Earth-independent missions, such as a mission to Mars, team composition becomes a critical leverage point for mitigating risks. The purpose of this project is to develop and validate TEAMSTaR (Tool for Evaluating And Mitigating Space Team Risks), a team composition decision support system, that can be used by stakeholders (e.g., schedule decision makers) to predict how a hypothetical team's social relations are likely to evolve and influence crew performance over the course of a mission.

Required Qualifications:
This position is open to current undergraduates enrolled in an accredited degree-seeking program at Northwestern.

Some additional requirements include: 1) Interest in studying space teams. 2) Interest in gaining data science experience (from data pre-processing to creation of knowledge) 3) Proficiency in NetLogo, R, and SQL.

Department: CS, IEMS
Education Level: If CS, Undergraduate Seniors or Masters students

Preferred Qualifications:
Ideal candidates will have experience with NetLogo, SQL, and/or the R programming language.

Please send a resume and a brief cover letter describing your interest in the position to Alina Lungeanu (alina.lungeanu@gmail.com).