

I would like to strongly encourage every CSE undergrad, and especially students of the honors program, to start seeking research experiences as early as possible. The benefits are enormous and include the following:

- Learn about research within and outside the department
- Identify your own interests in research
- Start working on your undergraduate thesis (within and outside UNL's honors program)
- Enroll in an independent study for credit hours
- Jumpstart your research-based Senior Design project
- Write an application for a prestigious undergraduate scholarship
- Beef up your resume and find individuals who would write reference letters for you in the future, etc.

CSE faculty can sponsor you on:

- UCARE award Feb 5—March 9, 2018 <https://ucare.unl.edu>
- Faculty's own REU grants or supplements
- UNL Summer Research Program <https://www.unl.edu/summerprogram/apply>,
- Future research-based Senior Design projects
- Various research-based internships, etc.

Beyond CSE, there are many opportunities for undergrad research:

- CRA-W DREU REU <https://cra.org/cra-w/dreu/>
- CRA-W CREU <https://cra.org/cra-w/creu/>
- NSF REU Sites https://www.nsf.gov/crssprgm/reu/list_result.jsp?unitid=5049, etc.

Below is a non-exhaustive list of CSE faculty interested in supervising undergraduate research. Also check:

- <https://cse.unl.edu/directory-faculty-research>
- <https://cse.unl.edu/research-groups-facilities>

First, check faculty's research interests on their homepages on the Web, then contact them directly to discuss your interests with them.

Berthe Y. Choueiry, choueiry@cse.unl.edu

In the Constraint Systems Laboratory (consystlab.unl.edu), we model the Sudoku as a constraint problem and design algorithms for solving it with and without search. We use the same algorithms to solve other puzzles such as the Minesweeper and the Game of Set and also industrial problems such as scheduling, resource allocation, and configuration. The Constraint Systems Laboratory will provide you with the best possible environment if you are interested in learning about and developing such algorithms and if you are willing to work hard, be involved in research, publish, and apply to prestigious scholarships.

ThanhVu (Vu) Nguyen, tnghuyen@cse.unl.edu

My research focuses on program verification and repair. In particular, I use dynamic and static techniques to discover program properties, prove program correctness, determine program complexities, and synthesize program repairs. My work aims to answer the following questions: *invariant/specification/contract discovery* (e.g., what does this program do? what properties does it have?), *program verification* (e.g., does this program run correctly? does it satisfy certain assertions?), and *program repair/synthesis* (e.g., how to automatically repair a program? how to synthesize code with respect to some requirements?)

Steve Reichenbach, reich@cse.unl.edu

I would employ talented undergraduate students to work on methods and tools for data analytics, informatics, and visualization of multi-dimensional, multi-spectral chemical analyses for applications in foods, fuels, environmental monitoring, medicine and healthcare, and chemical engineering.

Qiben Yan, yan@unl.edu

Our research group at THINK Lab@UNL focuses on research in cyber security, specifically on developing secure wireless communication systems, analyzing mobile security and privacy using app/framework analysis, and inspecting IoT security and privacy using reverse engineering and network level traffic analysis.