Peter Bremer-Feit

github.com/pbremerfeit pbremerfeit.github.io Linkedin pbremerfeit@gmail.com

Education

University of Illinois Urbana-Champaign | *Master of Computer Science* Dec 2025
Joint BS-MCS Program

University of Illinois Urbana-Champaign | *Bachelor of Science in Computer Science* Dec 2024
Junior (Senior Standing) *Current GPA: 4.0/4.0*

- **Relevant Course Work:** Linear Algrebra, Algorithms & Models of Computation, Algorithms II, Formal Models of Computation, System Programming, Computer Architecture, Computer System Organization, Programming Languages & Compilers, Computational Photography, Database Systems, Parallel Programming, Internet of Things

Illinois Institute of Technology | *Dual Enrollment* August 2020

- **Relevant Course Work:** Data Structures and Algorithms *GPA: 4.0/4.0*

Experience

Chamberlain Group | *Test Automation Engineer* Summer 2024

- Designed and wrote a program using LabVIEW, Appium, Python and Ardunio to test the person detection and facial recognition capabilities of Chamberlain's Video Keypad.
- Constructed a testing rig to simulate moving a mannequin around in 2D space for camera testing.
- Wrote a library to interact with a Copley Controls' Motor Drive through LabVIEW.
- Developed skills working along side a team using agile planning and scum boards.

Special Interest Group for Math and Algorithms | *Member* 2022 – Present

- UIUC club that focuses on advanced topics within theoretical computer science.

Robotics | *Builder, Mentor* 2016 – 2019, 2021 – 2022

- Participated in the FIRST Robotics Competition.
- Worked as one of the main builders on the Whitney Young Robotics Team.
- Mentored newer members and helped prepare them future competitions.

Skills

Languages: C/C++, Java, Python, HTML/CSS, SQL, OCaml, Django, Verilog, LaTeX, LabVIEW
Tools/Libraries: Git/GitHub, GDB, Valgrind, Bash, pthreads, OpenMP, Pandas, NumPy, Matplotlib, Requests, Selenium, Beautiful Soup, pybluez, Jupyter Notebooks, Appium, Arduino, OpenMP, MPI, Windows, Linux

Projects

Campus and Course Mapping System | *Django, SQLite, HTML/CSS, PythonAnywhere, Git* Spring 2023

- Developed a Campus and Course Mapping System at UIUC.
- Enabled seamless campus navigation, room selection, and class section information access.
- Implemented robust search features for course section filtering.
- Utilized web scraping libraries to automatically update course sections.

Device Location Tracker | *Python, Raspberry Pi, Bluetooth, pybluez, tkinter* April 2024

- Wrote a program to locate any Bluetooth enabled device within a house.
- Made Bluetooth beacons that could be placed around a house to track the location of devices.

Rubik's Cube Solver | *Python, NumPy, OpenCV* November 2023

- Wrote a program that scans Rubik's Cubes and gives the moves to solve them.

Image-Based Lighting | *Python, OpenCV, NumPy, Matplotlib, Juypter Notebooks, Blender* November 2023

- Reconstructed the lighting in a room from an HDR photo of a spherical mirror.
- Convert photo of a spherical mirror into equirectangular domain, allowing for use in blender renders.

Custom Malloc and Valgrind | *C, Git* October 2023

- Wrote versions of malloc, calloc, realloc and free in C which performed on par with the official C implementation.
- Implemented a simplified version of Valgrind to track memory leaks in C code.

Gradient Domain Fusion | *Python, OpenCV, NumPy, Matplotlib, Juypter Notebooks* October 2023

- Implemented an algorithm able to seamlessly blend images together using Poisson blending.
- Automatically shifts image color to better match background image.

Linux Shell | *C, ssh, fork, exec, Git* September 2023

- Coded a shell in C similar to the Linux shell Bash.

Image Quilting and Texture Transfer | *Python, OpenCV, NumPy, Matplotlib, Juypter Notebooks* September 2023

- Developed code for synthesising textures and rendering objects with textures taken from other objects.