

Brent Pappas

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EDUCATION

- **University of Central Florida (UCF)** Orlando, Florida
Bachelor of Science - Computer Science; GPA: 3.849 August 2017 - May 2021
Courses: Data Structures and Algorithms, Systems Software, Programming Languages, Discrete Structures
- **UCF** Orlando, Florida
PhD - Computer Science; GPA: 4.000 August 2021 - Present
Courses: Analysis of Algorithms, Complexity Theory, Computer Architecture, Compiler Construction

SKILLS SUMMARY

- **Languages:** Python 3, C/C++, Bash, HTML/CSS/JavaScript, Go, Haskell, Coq, SQL
- **Tools:** Git, GitHub, LLVM/Clang
- **Platforms:** Linux, Web, Windows
- **Soft Skills:** Leadership, Writing, Communication, Time Management

EXPERIENCE

- **UCF** In-person/Remote
Graduate Research Assistant July 2021 - Present
 - **Research in Programming Languages:** Stay up-to-date on the latest academic developments in programming languages.
 - **Formal Methods:** Formulate theorems about programming languages and try to prove them using the Coq Proof Assistant.
 - **Implement Ideas:** Implement research ideas in languages such as C++. E.g. a Clang plugin for transforming C preprocessor macros to C functions.
 - **Run Experiments:** Write Python and Bash scripts to automate running experiments.
- **SP+** In-person/Remote
Quality Assurance Coordinator September 2019 - July 2021
 - **Agile Software Development:** Engaged in agile software development methods within a small team to QA test software before moving on to later phases of development.
 - **Testing Automation:** Refactored and wrote Python scripts to automate testing of various online user applications.
 - **Mobile Application Testing:** Tested company Android apps for compatibility with various versions of Android.
- **Student Academic Resource Center of UCF** In-person
Peer Mentor August 2018 - December 2019
 - **Led Tutoring Sessions:** Led Computer Science 1 and Object Oriented Programming tutoring sessions involving Socratic learning methods.
 - **Faculty Collaboration:** Collaborated with UCF teaching staff to enhance tutoring session quality.
 - **Tutor Mentoring:** Observed other tutors' sessions and provided feedback as to how they may improve their communication and tutoring skills.

PROJECTS

- **Cpp2C:** C++ Clang plugin that automatically transforms eligible C preprocessor macros into C functions. This enables other static analysis tools to analyze C programs without needing to preprocess them first and lose developer abstractions.
- **Pokemon Trading Card Game to Tabletop Simulator:** NodeJS web application written in the Express framework. Interfaces with another API to allow users to create a virtual deck of cards from the Pokemon Trading Card Game. Users can then export those cards to the computer game Tabletop Simulator and actually play with other users. User decks were saved as grids of images and uploaded on the backend to a private AWS bucket. A user authentication and password reset system were in place to enable users to access their decks from any device.
- **Cardfight Vanguard API:** Wrote a Python script to collect card on thousands of card from the Cardfight Vanguard wiki. Uploaded images found to a private AWS bucket, then wrote a web API in Go to enable others to easily access data and images in a programmatic way.

PUBLICATIONS

- **SugarC: Scalable Desugaring of Real-World Preprocessor Usage into Pure C.:** Zach Patterson, Zenong Zhang, Brent Pappas, Shiyi Wei, and Paul Gazzillo. ICSE 2022.

POSTERS

- **Cpp2C: Transforming C Preprocessor Macros to C Language Constructs:** Presented a poster on transforming C preprocessor macros to C functions at the UCF 2022 Student Scholar Symposium.

HONORS AND AWARDS

- Provost Scholarship from the UCF.
- Member of the Burnett Honors College at the UCF.
- On the Dean's List at UCF for all of undergraduate degree.
- Received Bachelor's degree with cum laude honors from UCF.
- College Readiness and Learning Assessment (CRLA) Level 1 certified tutor.
- CRLA Level 2 certified tutor
- UCF Student Enhancement Training (SET) program certified.

VOLUNTEER EXPERIENCE

- **Camp Connect (at UCF)** Orlando, Florida
June 2021
 - **Teaching:** Taught elementary, middle, and high school students the basics of computer programming
- **UCF CECS Senior Design Judge** Orlando, Florida
April 2022
 - **Judging:** Followed a given rubric to judge the quality of capstone projects for seniors of the College of Engineering and Computer Science. Criteria included presentation quality, project design quality, and creativity.