ASHLEY B. HART

Researcher ~ Developer ~ Education Advocate

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SUMMARY

Ashley is a third-year Computer Science Ph.D. student in the Computing for Social Good Lab at the University of Florida. Her passion for artificial intelligence, video games, and computer science drives her research, which aims to develop new ways to simulate worlds and train intelligent agents. She believes that exploring interactions between AI techniques can yield new and innovative ways to create worlds for creative and constructive purposes. Ashley is currently researching how large-language models impact procedural content generation procedures.

SKILLS

Languages:	Python, GDScript, Java, HTML, CSS, JavaScript, C#, C++, C, R
Tools and Frameworks	Godot, Unity, React, Django, MUI, PyQt, Aesprite, GIMP, scikit-learn, NumPy, matplotlib, Tensorflow, PyTorch
Non-Technical:	Verbal & Written Communication, 2-D Art & Animation, Visual Design, Project Management, Leadership, Student Mentoring, Fast Learner, Self-Motivated

EDUCATION

8/2022 - Present **Ph.D. in Computer Science** — **University of Florida**
GPA: 3.88 | Advisor: Dr. Juan E. Gilbert | Current Stage: Qualifying Exam Phase

8/2022 - 5/2025 **M.S. in Computer Science** — **University of Florida**
GPA: 3.88

8/2018 - 5/2022 **B.S. in Computer Science** — **University of Central Florida**
GPA: 3.81

WORK EXPERIENCE

5/2025 – 8/2025 **AI Engineering Intern** — **Aptima Inc. – Orlando, FL**

- Serve as an AI Engineer at Aptima, advancing human-centered research and development through the design and implementation of intelligent systems.

5/2024 – 7/2024 **Software Development Intern** — **RTX Corporation (Raytheon Technologies) – Remote Position**

- Continued development of the PyQt-based graphical user interface (GUI) I developed last year. This project has grown to be a high-visibility simulation model application that caught the attention of RTX President. Most of the code I wrote during my previous internship persisted and was built upon by the team.
- Boosted proficiency with Python and GitHub, modified a large codebase, and solved various problems to support adding new features.
- Gained exposure to Autogen and provided documentation to support the development of a multi-agent LLM application.
- Continued mentorship relationships with colleagues and directors within the company to support my growth as a software developer and academic researcher.

5/2023 – 7/2023 **Software Development Intern** — **RTX Corporation (Raytheon Technologies) – Remote Position**

- Served as the lead developer of a PyQt-based graphical user interface (GUI) for in a simulation model application after presenting a prototype to my team's director.
- Greatly increased my Python proficiency and learned how to structure, develop, and refine software applications.
- Traveled to the Texas site to wrap up GUI development, assist software testers, and hand-off the code at the end of my internship.

5/2022 – 8/2022 **Software Development Intern** — **RTX Corporation (Raytheon Technologies) – Remote Position**

- Developed, tested, and deployed a variety of software features that were presented to our client.
- Trained image classification models to compete in a machine learning competition.
- Improved and added new technical documentation for active projects within the company.

5/2021 – 8/2021 **Undergraduate Researcher** — **Rutgers University – Remote Position**

- Conducted and presented research on classical and quantum communications with Dr. Anand Sarwate and Dr. Emina Soljanin as a member of the RISE@Rutgers 2021 cohort.
- Completed a series of lessons on quantum computing and information theory that exposed me to higher levels of mathematics and abstraction.
- Engaged in structured series of professional development opportunities that were geared toward success in graduate school and STEM careers.

9/2020 – 5/2021 **Undergraduate Researcher** **University of Central Florida – Orlando, FL**

- Conducted an independent study on quantum computing with the support of Dr. Sharma Thankachan.
- Participated in the UCF Office of Diversity and Include DIVE Scholars Program.
- Founded a club for teaching students about algorithms and data structures.

5/2020 – 8/2020 **Undergraduate Researcher** **University of Virgina – Remote Position**

- Developed and presented a Boolean satisfiability solver under the advisement of Dr. Matthew Dwyer.
- Learned about academia and the processes that are involved in publishing and producing successful research.
- Increased proficiency in the Python programming language, presentation skills, and my ability to examine hard problems and break them down into solvable pieces.

PUBLICATIONS

Presented in reverse chronological order.

Cassani, L., Davinroy M., Toumbeva, T., Bautista, P., Fortier, L., Cook, J., **Hart, A. B.**, Volkova, S. (2025). **Human-AI Collaboration for Synthetic Media Detection in Training and Operations** In Proceedings of the Interservice/Industry Training, Simulation and Education Conference (I/ITSEC), Orlando, FL, USA. DOI: TBD.

Gilbert, J.E., McKenzie, J., Smith, A., Jennings, J., & **Hart, A. B.**. (2024). **Two-Step Ballot Verification: Mitigating the Impact of the Hawthorne Effect on Vote-Flipping Studies**. In Proceedings of the Human Factors and Ergonomics Society (HFES) Annual Meeting, Phoenix, AZ, USA, pp. 1–5. DOI: https://journals.sagepub.com/doi/full/10.1177/10711813241279792

McNamara, K., **Hart, A.B.**, Morrow, N., McKenzie, J., Gilbert, J.E. (2024). **Plain Language to Address Dimensionality in Feature-Contribution Explanations for End-Users**. In: Stephanidis, C., Antona, M., Ntoa, S., Salvendy, G. (eds) HCI International 2024 Posters. HCII 2024. Communications in Computer and Information Science, vol 2120. Springer, Cham. https://doi.org/10.1007/978-3-031-62110-9_21

SOFTWARE PROJECTS

Video Game **Rainewal** **August 2024 - Present**
Developing a small game where the player is a rain cloud tasked with filling the earth with lush, green vegetation. Completing this to gain more experience with Godot.

Video Game **Umbral** **July 2024 - August 2024**
Developed a 2D-platformer game with shadow-based health mechanics and alchemy elements as a part of the fifteenth Pirate Software Game Jam which lasted two-weeks. The final product of the game jam can be found on my itch.io page. Player feedback was largely positive. This game is still under development.

Mobile & Web App **Recycpal** **January 2022 - September 2023**
Contributed to a machine learning application that classifies objects and provides information on how to properly dispose of them. Completed this with my hackathon team, The Turtleneck Tech Team and took third place overall DeltaHacks 2022.

Video Game **Depths** **September 2021 - May 2022**
Developed the platforming segments of the game in Unity as a solo developer, and managed my team and project for my senior design project at UCF. Advanced my knowledge of C#, program structure in game engines, game AI, pixel art animations, special effects, level design and game marketing.

Software **PharmEasy** **November 2021**
Developed the front-end application that helps patients order, refill, and receive their prescription medications. Gained experience with React, Javascript, and Material UI. Completed this with my hackathon team, The Turtleneck Tech Team and took third place overall at KnightHacks 2021

Video Game **Insomnia** **January 2021 - May 2021**
Contributed as the art director, project manager, and enemy artificial intelligence developer for a 2D platformer Unity game. Learned how to design effective pixel art and how to animate in programs like Aesprite. Learned how to use Unity's game engine and how to organize game systems.

Web App **Rageboard** **November 2020**
Created a stress relief web application where users could relieve stress by button-mashing on the keyboard to earn points for KnightHacks 2020.

Software **DPLL Satisfiability Solver** **May 2020 - August 2020**
Created a Boolean satisfiability solver based on the Davis-Putnam-Logemann-Loveland (DPLL) algorithm in Python as a part of my summer research experience at UVA. Learned Python and improved my ability to structure code and reduce hard problems into smaller parts.

Software

FLOW - A Study Assistant **March 2019**
Developed a website that served as a study assistant called FLOW with HTML, CSS and Javascript. The website contained a Pomordoro timer and links to study aids. This project helped me break into coding. Completed during KnightHacks 2019.

AWARDS

2023 **Grace Hopper Conference Scholarship**
Received a scholarship that allowed me to virtually attend the Grace Hopper Conference.

2023 **GenNEXT Fellowship**
Selected as a recipient of this fellowship by Dr. Kyla McMullen and Dr. Jeremy Waisome at the University of Florida. Received funding for my Ph.D. and access to professional development opportunities.

2022 **Florida Education Fund McKnight Fellowship**
Received funding for my Ph.D. at the University of Florida and access to professional development opportunities.

2022 **GEM Doctoral Fellowship**
Received funding for my Ph.D. at the University of Florida, an internship with Raytheon Technologies and professional development opportunities.

2014 **Martin Luther King Jr. Humanitarian Award**
Awarded to hand-picked students in Orange County by the City of Orlando who demonstrated the humanitarian qualities of Dr. Martin Luther King Jr. in their day-to-day lives.