***Kevin Al******arcón Negy***

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***Education:***

**Cornell University, Ithaca, NY**

Ph.D., **Computer Science** *(Anticipated) May 2025*

Advisor: Adrian Sampson

M.S., **Computer Science** *December 2021*

**University of Central Florida, Orlando, FL**

B.S., **Computer Science,** *summa cum laude* *August 2018*

B.A., **International and Global Studies,** *summa cum laude* *May 2013*

B.A., **Spanish,** *summa cum laude*  *May 2013*

Honor’s Thesis Title: Costa Rica, Panama, and Nicaragua: Explaining Economic Success Levels (Thesis Chair: Dr. Houman Sadri)

***Teaching Experience:***

**Teaching Assistant –** Practicum in Operating Systems (CS 4411) **Cornell University**

* Held weekly office hours and grading sessions  *Spring 2025*

**Instructor of Record –** Fundamental Programming Concepts (CS 1109) **Cornell University**

* Created all lectures and most course materials *Summer 2024*
* Introduced beginner programming skills to incoming undergraduate students from underrepresented backgrounds

**Teaching Assistant –** Practicum in Operating Systems (CS 4411) **Cornell University**

* Held weekly office hours and grading sessions  *Spring 2024*
* Guest lecture - “Interrupts, Privilege Levels, and Memory Protection”

**Junior Knights Colonial High School Program Orlando, FL**

* Initiated partnership between Junior Knights, a CS *Fall 2017–Spring 2018*

volunteer program, and Colonial HS, residing in an underserved area

* Taught introductory programming topics once a week in AP CS Principles course with seven students.

**Auxiliar de Conversación-**High School English Teaching Assistant **Spain**

* I.E.S. Fray Luis de Granada *Oct 2014–May 2015*
* I.E.S. El Sur *Oct 2013–May 2014*

***Publications:***

**Kevin Alarcón Negy**, Tycho Nightingale, Hakim Weatherspoon, Zhiming Shen. *Towards Swap-Free, Continuous Ballooning for Fast, Cloud-based VM Migrations.* To appear in Proceedings of 15th ACM Symposium On Cloud Computing, Redmond, WA. Nov. 2024.

**Kevin Alarcón Negy**, Peter Rizun, and Emin Gün Sirer. *Selfish Mining Re-Examined*. In Proceedings of Financial Cryptography and Data Security 2020 Twenty-Fourth International Conference, Kota Kinabalu, Malaysia. Feb. 2020.

Josiah Wong, Lauren Hastings, **Kevin Negy**, Avelino Gonzalez, Santiago Ontañón, and Yi-Ching Lee. *Machine Learning from Observation to Detect Abnormal Driving Behavior in Humans*. In Proceedings of Thirty-First International FLAIRS Conference, Melbourne, FL. May 2018.

Justin K. Pugh, L. B. Soros, Rafaela Frota, **Kevin Negy**, and Kenneth O. Stanley. *Major Evolutionary Transitions in the Voxelbuild Virtual Sandbox Game*. In Proceedings of ECAL 2017: The Fourteenth European Conference on Artificial Life, Lyon, France.Sep. 2017.

***Research Experiences:***

**Cornell University Ithaca, NY**

* + Project Area: Cloud Computing *Fall 2023-Present*

Investigating GPU performance in various cloud-provider settings to measure expected differences between GPUs of the same type from the same instance type. Preliminary results show that for GPU-bound processes, performance can vary around 10% even when the same instance type/GPU model is rented from AWS.

* + Project Area: Operating Systems *Fall 2019-Fall 2020*

Explored methods of collecting thorough memory access logs from Linux. Modified Linux kernel to trace memory accesses of a process by writing a device driver and kernel functions. Created an x86 disassembler to decode memory instructions from Intel Pin tool.

* + *Selfish Mining Re-Examined*

Project Area: Cryptocurrency *Fall 2018–Summer 2019*

Created a simulation to examine the difficulty adjustment algorithms of several cryptocurrencies and test their resilience against the presence of a selfish miner.

**Exostellar, Inc. Ithaca, NY**

* + *Towards Swap-Free, Continuous Ballooning for Fast, Cloud-based VM Migrations*

Project Area: Virtualization *Spring 2021-Fall 2022*

Modified Xen balloon driver in Linux kernel to directly satisfy failing memory requests to prevent Out-of-Memory (OOM) killer on non-overcommitted hypervisors. Created user-space program to automatically minimize VM memory to speed up migration in cloud settings.

**University of California, Berkeley**  **Berkeley, CA**

* + *Exploring Adaptability in Smart Internet Scanner*

Advisor: Dr. Vern Paxson, Project Area: Networks *Summer 2017*

Participated in Summer Undergraduate Program in Engineering Research at Berkeley (SUPERB) working on an IPv6 network scanning project and analyzing scan data to implement adaptive functionality in scanning algorithm.

**University of Central Florida**  **Orlando, FL**

* + *Machine Learning from Observation to Detect Abnormal Driving Behavior in Humans*.

Advisor: Dr. Avelino Gonzalez, Project Area: Artificial Intelligence *Fall 2016–Spring 2018*

Worked on the GenCL Traffic Simulator Project, with the objective of creating a driving model using observational learning to identify dangerous driving behavior.

* + *Major Evolutionary Transitions in the Voxelbuild Virtual Sandbox Game*

Advisor: Dr. Kenneth Stanley, Project Area: Neuro-evolution *Fall 2016–Spring 2017*

Helped analyze data and provide written observations of block structures built by creative agents evolved through neuro-evolution. Analysis led to conference publication in ECAL 2017.

**Institute of Human and Machine Cognition Ocala, FL**

* + Advisor: Dr. Bonnie Dorr, Project Area: Natural Language Processing  *Fall 2016–Spring 2017*

Worked on the CAUSE project (Cyber-attack Automated Unconventional Sensor Environment) using my linguistic background to help investigate connection between online language and cyber-attack events.

***Work Experience:***

**Exostellar, Inc., Software Engineer** *Fall 2021- Summer 2023*

* Part of Virtualization team focused on Xen Hypervisor and Linux kernel
* Also worked with Kata Containers and internal Golang repositories
* Mentored two interns, one in each summer of 2022 and 2023

**Bytedance, Inc., Intern**  *Summer 2021*

* Worked on adding eBPF hooks into Linux memory management subsystem for read/write page cache

**Exostellar, Inc., Intern**  *Spring 2021*

* Worked on swap-free, continuous ballooning for VM migration (see research sections for more details)

***Volunteer/Leadership Experiences:***

***Ledger*** – served as a reviewer for cryptocurrency journal  *Fall* *2019*

**Cornell Visit Day Czar—**helped organize and run visitation days for admitted PhD and master’s students. *Spring 2019*

**Junior Knights Colonial High School Program—**laid the groundwork for a computer science teaching program for underserved students; taught once a week in AP Computer Science Principles course with seven students. *Fall 2017–Spring 2018*

**UCF STEM Ambassador****—**selected based on merit to represent UCF and motivate students in grades K*–*12 to pursue STEM education. *Fall 2017-Spring 2018*

**UCF Junior Knights Programming Volunteer**—helped tutor high school students in Python basics.  *Spring 2016, 2017*

**Comenius Programme—**selected based on merit to accompany a group of students from IES El Sur to visit fellow secondary school, Zespol Szkol, in Mszana Dolna, Poland, as part of European international educational project. *March 2014*

***Poster Presentations:***

**Kevin Negy**, Austin Murdock, Frank Li, and Vern Paxson. “Exploring Adaptability in Smart Internet Scanner.” Presented at *SACNAS 2017* in Salt Lake City, UT. Aug. 2017.

(Recipient of UCF’s 2018 Showcase of Undergraduate Research Excellence Award)

***Scholarships, Awards, & Honors:***

Sloan Scholar, Alfred P. Sloan Foundation’s Minority Ph.D (MPHD) Program  *2018*

Ford Fellowship Honorable Mention *2018*

National Action Council for Minorities in Engineering (NACME) Scholar *2017*

Ronald E. McNair Scholar  *2016*