Kevin Alarcón 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**

o 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.

o 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.

o *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**

o *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**

o *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**

o *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.

o *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**

- o 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*