

STEPHEN HENDRY HOOVER

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Curriculum Vitae

EDUCATION

- Ph.D. in Complex Systems and Brain Sciences** In progress
Florida Atlantic University, Boca Raton, Florida USA
- B.S. (Hons.) in Mathematics** May 2020
Florida Atlantic University, Boca Raton, Florida USA
Cum Laude and Departmental Honors
- Visiting Student** July 2018
University of Warwick, School of Engineering, Coventry, UK
Biomedical Sensors Laboratory

AWARDS

International

- Travel Award from the Adams Center for Entrepreneurship at *Florida Atlantic University* supporting travel to *Østfold University College, Norway* \$1,600 USD (MAR.2020 | Cancelled due to SARS-CoV-2 and COVID-19)

Regional

- Undergraduate Researcher of the Year for the *Charles E. Schmidt College of Science* at *Florida Atlantic University* \$1,000 USD (APR.2019) 🏆
 - Best undergraduate across all departments and majors in the *C. E. Schmidt College of Science* and first ever recipient from the *Department of Mathematical Sciences*. Selected by the Dean of the College and the Assistant Dean of Undergraduate Research.
- Third Place in Wave Entrepreneurial Research Competition at *Florida Atlantic University* for “Prototype Machine Olfaction Device using Deep Learning Artificial Neural Networks” \$1000 USD (OCT.2017 – APR.2018) 🏆


FELLOWSHIPS AND GRANTS

- Brain Institute Fellowship \$30,000 USD/year stipend and \$3,000 USD/year healthcare and full tuition waiver (AUG.2020 – MAY.2025).
 - One of eight annual recipients selected across three Ph.D. programs in Neuroscience at *Florida Atlantic University*.
- Graduate Grant, *Florida Atlantic University* \$2,400 USD (AUG.2020 – MAY.2021)
- Undergraduate Research Grant: “Redacted for Web Publication,” *Florida Atlantic University* \$1,200 USD (JAN.2019 – AUG.2019)
- Rubin and Cindy Gruber Machine Olfaction Summer Research Fellowship at *Florida Atlantic University; University of Warwick; Imperial College London* \$3,500 USD (JUL.2018 – AUG.2018)
- Distinction Through Discovery Summer Undergraduate Research Fellowship at *Florida Atlantic University, University of Warwick, and Imperial College London* \$4,000 USD (MAY.2018 – AUG.2018) 🏆

PUBLICATIONS

Refereed Articles

2. E. STARK, S. HOOVER, A. DECESARE, AND E. BARENHOLTZ, *Medicine has gone to the dogs: Deep learning and robotic olfaction to mimic working dogs*, IEEE Technology and Society Magazine, 37 (2018), pp. 55–60

1. E. STARK, J. PITT, A. N. WICAKSONO, K. MILANOVIC, V. LUSH, AND S. HOOVER, *Odorveillance and the ethics of robotic olfaction [opinion]*, IEEE Technology and Society Magazine, 37 (2018), pp. 16–19 

SYMPOSIA AND CONFERENCES

Posters – Regional

- E. Stark, W. Hahn, S. Hoover, A. DeCesare, J. Covington, and E. Barenholtz, “Deep learning applications in robotic olfaction: Non-invasive melanoma diagnosis using gas sensing,” Poster presented at: Florida Atlantic University’s Research Showcase, 2018 September 20–21; Boca Raton, Florida United States of America.

Presentations – National

- S. Hoover, “Machine olfaction using deep learning artificial neural networks,” biomedical engineering oral presentation presented at: The National Conference on Undergraduate Research, 2018 April 2–7; Edmond, Oklahoma United States of America. 

INVITED TALKS

International

- Presented the following paper: "M. K. COHEN AND M. HUTTER, *Pessimism about unknown unknowns inspires conservatism*, 2020" to the AI Safety Denmark Reading Group (09.JUL.2020).
- Presented the following paper: "M. K. COHEN, B. VELLAMBI, AND M. HUTTER, *Asymptotically unambitious artificial general intelligence*, 2019" to the AI Safety Denmark Reading Group (11.MAR.2020).

RESEARCH EXPERIENCE

Undergraduate – *Florida Atlantic University*

- Department of Mathematical Sciences
 - Reduced computational complexity of implementing the substitution box (SBox) of the Advanced Encryption Scheme (AES) on Quantum Circuits by shrinking Toffoli Depth (AUG.2019–DEC.2019).
- Machine Perception and Cognitive Robotics Laboratory, Center for Complex Systems & Brain Sciences
 - Designed machine olfaction systems that incorporate deep learning algorithms. Research focuses on using machine olfaction for state of the art biomedical devices (AUG.2017 – JAN.2019).
- Tiny Earth (Formerly: Small World Initiative) Laboratory, Department of Biological Sciences
 - Analyzed novel antimicrobial substances from soil microbes. DNA sequences, organic extracts, and other pertinent findings were cataloged into an international database for use in the synthesis of novel antibiotics. Experiments tested bacterial resistance against safe relatives of pathogens (JAN.2017 – DEC.2017).

Visiting Student – *University of Warwick*

- Biomedical Sensors Laboratory, School of Engineering
 - Recorded human biological samples using electronic nose sensor arrays and analytical chemistry equipment including ion-mobility spectrometers. (JUL.2018 – AUG.2018).

SERVICE TO PROFESSION

National

- Reviewer for PyOhio 2019

TEACHING

Undergraduate – *Florida Atlantic University*

- Tutor, Calculus and Analytic Geometry II – Math Learning Center (Fall 2019)

- Tutor, Calculus and Analytic Geometry II – Math Learning Center (Summer 2019)
- Tutor, Calculus and Analytic Geometry II – Math Learning Center (Spring 2019)
- Teaching Assistant, Life Science Laboratory – Dept. Biological Sciences (Fall 2017)

RELATED PROFESSIONAL SKILLS

- Programming Languages: Python, R, Bash, HTML5, CSS, Liquid
- Programming Software: Git, Jupyter Notebook, RStudio, PyTorch, Pacman, Jekyll
- Operating Systems: Linux (Arch), Unix (FreeBSD), OSX, Windows
- Mathematics Software: \LaTeX , Wolfram Mathematica, GeoGebra
- Wet-Lab Techniques: PCR, Gel-Electrophoresis, Serial Dilutions, UN-3373 Biological Substance (Cat. B) Sample Preservation and Transportation, Export Compliance, Material Transfer Agreements (MTAs)

MEMBERSHIPS AND AFFILIATIONS

International

- Member: Electronic Frontier Foundation (2020 – Present)
- Member: Artificial Intelligence Safety Denmark Reading Group (FEB.2020 – Present)
Hyperlink URL: [🔗](#)
- Secretary: Society for Industrial and Applied Mathematics, *Florida Atlantic University* (2019 – 2020)
- Student Affiliate: Association for Computing Machinery (2017 – 2019)

Regional

- President: Psychology Club, *Florida Atlantic University* (2017 – 2019)
- Outreach Coordinator: Council for Scholarship and Inquiry, *Florida Atlantic University* (2017)

COMMUNITY OUTREACH

International

- *DevOcean* Hackathon/Conference by *Trust International* at *Østfold University College*, Norway (March 25th, 2020 – March 28th, 2020 | Cancelled due to SARS-CoV-2 and COVID-19)

Regional

- South Florida Science Center and Aquarium, *Brain Blitz: Hands on Brain Fun for Kids* (March 31st, 2018)
- Volunteer, Delray Medical Center, in excess of 80 hours (2017)

MENTORSHIP

- Thabasya Veeramani – B.S./M.S. student in Preprofessional Biology and Medical Sciences at the *University of Florida*. Interests in Effective Altruism, specifically Earning to Give (2020 – Present).
- Misha Klopukh – FAU High School student and a B.S. student in Mathematics at *Florida Atlantic University*. Interests in technical artificial intelligence (AI) alignment research (2019 – Present).
- Caitlyn E. Coy – Received Full Tuition Waiver, Room, Board, and Resident Assistantship towards a B.S. in Community Psychology at *Palm Beach Atlantic University*. Interests in Effective Altruism, specifically non-profit work (2019 – 2020).

PERSONAL

- Redacted for Web Publication



REFERENCES

Provided Upon Request