Michael Suguitan

Experience

Mar–Dec 2022 **ABB**, *Raleigh, NC*, Robotics Postdoctoral Researcher.
Deep reinforcement learning and computer vision for robot perception and manipulation.

Oct 2016 –Dec 2021 **Cornell University**, *Ithaca, NY*, PhD Candidate, Research Assistant.
Researched design, artificial intelligence, and telepresence for human-robot interaction [1-10].

May–Aug 2021 **Facebook AI Research**, *Remote*, Robot Behavior Research Intern.
Researched deep learning applications for multimodal robot behavior generation [10].

Feb–Aug 2019 **Honda Research Institute Japan**, *Saitama, Japan*, Robot Behavior Research Intern.
Researched applications for robot behavior generation and modification with neural networks [3].

Sep–Dec 2018 **Samsung Research America**, *Mountain View, CA*, Deep Learning Research Intern.
Researched neural networks for translation between human and robot movements [2].

Aug 2015 –May 2016 **NASA Marshall Space Flight Center**, *Huntsville, AL*, Electromagnet Research Intern.
Designed controllers, characterization tests, and circuit boards for an electromagnetic actuator.

May–Aug 2015 **LORD Corporation**, *Cary, NC*, Control Systems Research Intern.
Simulated active vibration control systems for helicopters.

Education

2016–2022 **Cornell University**, PhD Robotics, Minor in Computer Science.
Teaching Assistant: MAE 2250 (Mechanical Synthesis), INFO 3300 (Data-Driven Web Applications)
Organizations: Robotics Graduate Student Organization (Vice President), Sibley Grads in MAE (Outreach Volunteer), The Cornell Daily Sun (Photographer), PhD Commercialization Fellow 2020.

2012–2015 **North Carolina State University**, BS Mechanical Engineering, Minor in Programming.
GPA: 4.0/4.0. Organizations: ASME Design Team (Robotics Team Lead), IEEE Robotics Team, University Scholars Program, University Tutorial Center (Physics and Engineering Tutor).

Skills

Programming: Python, JavaScript, machine learning (PyTorch, Keras, TensorFlow, Scikit-learn, training large models on large hardware), data science (analysis, statistical methods, generation), ROS, Linux, Git, Docker, web development, web scraping

Mechanical: Design, prototyping, CAD, 3D printing, laser cutting, machining, dynamics and controls, kinematic analysis and simulation, MATLAB, home improvement, automotive maintenance

Electrical: Circuit design and fabrication, soldering, microcontrollers

Miscellaneous: LaTeX, user interface and evaluation design, statistical analysis, business model canvassing, customer discovery, Adobe Lightroom and Photoshop, Final Cut Pro, DaVinci Resolve

Publications

[1] **Michael Suguitan** and Guy Hoffman. Blossom: A Handcrafted Open-Source Robot. *ACM Transactions on Human-Robot Interaction (THRI)*, 2019.

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[2] **Michael Suguitan**, Mason Bretan, and Guy Hoffman. Affective Robot Movement Generation Using CycleGANs. In *ACM/IEEE International Conference on Human-Robot Interaction (HRI) Late Breaking Reports*, 2019.

[3] **Michael Suguitan**, Randy Gomez, and Guy Hoffman. MoveAE: Modifying Affective Robot Movements Using Classifying Variational Autoencoders. In *ACM/IEEE International Conference on Human-Robot Interaction (HRI)*, 2020.

[4] **Michael Suguitan**. Robots as Humanizing Post-Digital Media. In *International Conference on Social Robotics (ICSR) Metaphors for HRI Workshop Submissions*, 2020.

[5] **Michael Suguitan** and Guy Hoffman. You Are (Not) The Robot: Variable Perspective Motion Control of a Social Telepresence Robot. In *ACM Conference on Human Factors in Computing Systems (CHI) Extended Abstracts*, 2021.

[6] Patrícia Alves-Oliveira, Maria Luce Lupetti, Michal Luria, Mafalda Gamboa, Lea Albaugh, Waki Kamino, Anastasia K. Ostrowski, David Puljiz, Pedro Reynolds-Cuéllar, Marcus Scheunemann, **Michael Suguitan**, and Dan Lockton. Collection of Human-Robot Interaction Metaphors. In *ACM Conference on Designing Interactive Systems (DIS)*, 2021.

[7] **Michael Suguitan** and Guy Hoffman. A Portrait of the Robot as a Communicative Medium: Using the DIY Blossom Robot for Accessible Embodied Telepresence. In *International Conference on Social Robotics (ICSR) Student Design Competition (Finalist)*, 2021.

[8] **Michael Suguitan** and Guy Hoffman. What Is It Like to Be a Bot? Variable Perspective Embodied Telepresence for Crowdsourcing Robot Movements. In *Personal and Ubiquitous Computing*, 2022.

[9] **Michael Suguitan**. At Least, Be Human: Humanizing the Robot as a Medium for Communication. In *RoboPhilosophy*, 2022.

[10] **Michael Suguitan**, Nick DePalma, Jessica Hodgins, and Guy Hoffman. Face2Gesture: Translating Facial Expressions Into Robot Movements Through Shared Latent Space Neural Networks. In *revision*, 2023.

Achievements

2021 **Scientific Rigor Presenter Award**, Cornell Sibley Graduate Research Symposium.

Most Market-Ready, Cornell Digital Agriculture Hackathon. Designer and data scientist for a device that uses computer vision to appraise fruit freshness to implement dynamic pricing.

2020 **Commercialization Fellow**: Program for engineering PhD students to explore the commercial viability of their research. Conducted over 100 customer discovery interviews with STEM educators through the NSF I-Corps program.

2019 **Third Place**, HRI Late Breaking Reports [2].

2016 **Best First Time Hack**, Cornell BigRed//Hacks. Mechanical designer and programmer for PuppetPlant, a robotic plant that conveys energy consumption through lights and movement.

2015 **First Place**, ASME IMECE International Design Competition (Robots for Relief). Team leader for the NCSU WolfTank, a robot designed to tread an obstacle course of water, sand, and stairs to safely deliver a payload of grains.

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Nominee, NCSU College of Engineering Senior Award for Citizenship and Service.

First Place, ASME Student Design Competition (Robots for Relief).

First Place, NCSU Mechanical Engineering Senior Design Project. Programmer for a uranium pellet handling project sponsored by General Electric.

2014 **First Place**, ASME Student Design Competition (UAV Challenge).

Volunteering and Outreach

Reviewer

- THRI
- HRI (Full papers, demonstrations)
- UIST
- AI-HRI

Mentorship

Masters Students: Ankita Chandak, Harrison Chang, Michael Hu, Miranda Jeffries, Antoine Klopocki, Carolyn Shi, Ryan Tine, Angela Zhang

Undergraduate: Cheng "CC" Chang, Emma Cohn, Rebecca Cooper, Preston Rozwood, Dongqing Wang

Miscellaneous

Cornell RGSO: Vice president of the Cornell Robotics Graduate Student Organization, where I helped host weekly research seminars and foster communication across the various Cornell robotics labs.

Robotics Outreach: Designed and led several demonstrations and workshops to introduce younger generations to robotics (New York State 4-H, Cornell BRB Kids' Science Day, Expanding Your Horizons).

SiGMA Outreach: Organized STEM outreach presentations and performed in teleconcerts for the local community.

Languages

English: Fluent

Tagalog: Advanced conversational

Japanese: Intermediate conversational

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