

## Yuri Gloumakov

371 Fairfield Way, Unit 4157 • Storrs, CT 06269 • (857) 207-6555 • yuri.gloumakov@uconn.edu

### Education

Yale University, New Haven, CT

PhD Mechanical Engineering and Materials Science

Dissertation title: “Prototypical Arm Motions from Human Demonstration for Upper-Limb Prosthetic Device Control”

Thesis Advisor: Aaron M. Dollar

Columbia University, New York, NY

B.S. Biomedical Engineering, minor in Mechanical Engineering

Brandeis University, Waltham, MA

B.S Physics, minor in Mathematics

### Research Experience

University of Connecticut – Storrs | August 2024 – Present

*Assistant Professor, Department of Electrical and Computer Engineering*

*Director of the RUKA Lab*

University of California – Berkeley | July 2021 – July 2024

*Postdoctoral Research Scholar, Advisor: Prof. Hannah S. Stuart*

Yale University | July 2014 – June 2021

*Graduate Research Fellow, Advisor: Prof. Aaron M. Dollar*

Columbia University | September 2013 – May 2014

*Research Assistant, Advisor: Prof. Sunil K. Agrawal*

Pennsylvania State University - University Park | June – August 2013

*Research Assistant - NSF funded REU, Advisor: Prof. Janna K. Maranas*

### Journal Publications

- J1. Lee J, McPherson AIW, Huang H, Yu L, Gloumakov Y, Stuart HS, “Expanding functional workspace for people with C5-C7 spinal cord injury with supernumerary dorsal grasping”, IEEE Transactions on Neural Systems & Rehabilitation Engineering, vol. 33, pp. 22-33, Dec. 2024. IF: 5.2
- J2. Gloumakov Y, Huh TM, Stuart HS, “Fast In-Hand Slip Control on Unfeatured Objects with Programmable Tactile Sensing”, IEEE Robotics and Automation Letters, vol. 9(7), pp. 6059-6066, May 2024. IF:5.3
- J3. Spiers AJ, Gloumakov Y, Dollar AM, “Transradial Amputee Reaching: Compensatory Motion Quantification Versus Unaffected Individuals Including Bracing”, IEEE Transactions on Medical Robotics and Bionics, vol. 6(2), pp. 706-717, Mar. 2024. IF: 3.7
- J4. Chang EY, McPherson AIW, Adolf RC, Gloumakov Y, Stuart HS, “Modulating Wrist-Hand Kinematics in Motorized Assisted Grasping with C5-6 Spinal Cord Injury”, IEEE Transactions on Medical Robotics and Bionics, vol. 6(1), pp. 189-201, Feb. 2023. IF: 3.7
- J5. Gloumakov Y, Bimbo J, Dollar AM, “Trajectory control – An effective Strategy for Controlling Multi-DOF Upper Limb Prosthetic Devices”, IEEE Transactions on Neural Systems & Rehabilitation Engineering, vol. 30, pp. 420-430, Feb. 2022. IF: 5.2
- J6. Gloumakov Y, Spiers AJ, Dollar AM, “Dimensionality Reduction and Motion Clustering During Activities of Daily Living: Decoupling Hand Location and Orientation”, IEEE Transactions on Neural Systems & Rehabilitation Engineering, vol. 28(12), pp. 2955-2965, Nov. 2020. IF: 5.2

- J7. Gloumakov Y, Spiers AJ, Dollar AM, “Dimensionality Reduction and Motion Clustering During Activities of Daily Living: Three-, Four-, and Seven-Degree-of-Freedom Arm Movements”, IEEE Transactions on Neural Systems & Rehabilitation Engineering, vol. 28(12), pp. 2826-2836, Nov. 2020. IF: 5.2
- J8. Feix T, Bullock IM, Gloumakov Y, Dollar AM, “Effect of Number of Digits on Human Precision Manipulation Workspaces”, IEEE Transactions on Haptics, vol. 14(1), pp. 68-82, Jan.-Mar. 2020. IF: 2.8
- J9. Sustaita D, Gloumakov Y, Tsang LR, Dollar AM, “Behavioral correlates of semi-zygodactyly in Ospreys (Pandion haliaetus) based on analysis of internet images”, PeerJ, vol. 7, pp. e6243, Feb. 2019. IF: 2.7

### **Peer-Reviewed Conference Publications**

- C1. Uwakwe MT, Gloumakov Y, “PhaseHand: Design of an Underactuated Grasp Changing Robot Hand”, proceedings of the 2025 ASME IDETC/CIE Mechanisms and Robotics Conference, Anaheim CA, Aug. 2025.
- C2. Gloumakov Y, Chang EY, Stuart HS, “Synchronicity: A Measure of Multi-Joint Movement Coordination in Device Assessment”, proceedings of the 2025 IEEE RAS/EMBS International Conference on Rehabilitation Robotics (ICORR), Chicago IL, pp. 295-300, May 2025. AR: 85%
- C3. Yang Q, Gloumakov Y, Spiers AJ, “Multi-feature Compensatory Motion Analysis for Reaching Motions Over a Discretely Sampled Workspace”, proceedings of the 2024 10th IEEE RAS/EMBS International Conference for Biomedical Robotics and Biomechatronics (BioRob), Heidelberg Germany, pp. 284-290, Sep. 2024.
- C4. McPherson AIW, Adachi K, Gloumakov Y, Stuart HS, “A Grasp Taxonomy for People with C5-7 Spinal Cord Injury”, proceedings of the 2024 46th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Orlando FL, pp. 1-7, Jul. 2024.
- C5. McPherson AIW, Abbott ME, White W, Gloumakov Y, Stuart HS, “A Wearable Testbed for Studying Variable Transmission in Body-Powered Prosthetic Gripping”, proceedings of the 2023 IEEE RAS/EMBS International Conference on Rehabilitation Robotics (ICORR), Singapore, pp. 1-6, Sep. 2023.
- C6. Chang EY, Mardini R, McPherson AIW, Gloumakov Y, Stuart HS, “Tenodesis Grasp Emulator: Kinematic Assessment of Wrist-Driven Orthotic Control”, proceedings of the 2022 IEEE International Conference on Robotics and Automation (ICRA), Pennsylvania PA, pp. 5679-5685, May 2022. AR: 43%
- C7. Gloumakov Y, Bimbo J, Dollar AM, “Trajectory Control for 3 Degree-of-Freedom wrist Prosthesis in Virtual Reality: A Pilot Study”, proceedings of the 2020 8th IEEE RAS/EMBS International Conference for Biomedical Robotics and Biomechatronics (BioRob), New York NY, pp. 765-772, Nov. 2020.
- C8. Gloumakov Y, Bimbo J, Dollar AM, “Trajectory Control for a Myoelectric Prosthetic Wrist”, proceedings of the Myoelectric Controls Symposium (MEC), Fredericton Canada, Jul. 2020.
- C9. Gloumakov Y, Spiers AJ, Dollar AM, “A Clustering Approach to Categorizing 7 Degree-of-Freedom Arm Motions during Activities of Daily Living”, proceedings of the 2019 IEEE International Conference on Robotics and Automation (ICRA), Montreal Canada, pp. 7214-7220, May 2019. AR: 45%
- C10. Spiers AJ, Gloumakov Y, Dollar AM, “Examining the Impact of Wrist Mobility on Reaching Motion Compensation across a Discretely Sampled Workspace”, proceedings of the 2018 7th IEEE International Conference on Biomedical Robotics and Biomechatronics (BioRob), Enschede Netherlands, pp. 819-826, Aug. 2018.
- C11. Gloumakov Y, Feix T, Bullock IM, Dollar AM, “Grasp Stability When Manipulating Objects with Two to Five Digits,” proceedings of the 2016 IEEE Haptics Symposium (HAPTICS), Philadelphia PA, pp. 84-91, Apr. 2016.

- C12. Feix T, Bullock IM, Gloumakov Y, Dollar AM, “Rotational Ranges of Human Precision Manipulation When Grasping Objects with Two to Five Digits”, proceedings of the 2015 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Milan Italy, pp. 5785-5790, Aug. 2015.

### Patents

- P1. Gloumakov Y, “Sensor for Slip Detection and Characterization”, Provisional Patent 35 USC 111(b), Application#: 63/749,164.

### Funded Research Projects

As primary investigator:

- G1. *Engagement Scholarship Fund* - \$5,000  
“Transformative Skill-Building for Students with Limb Differences”  
Period: 3/1/2025-2/28/2026
- G2. *Scholarship Facilitation Fund* - \$2,000  
“Micro-scale tactile sensor”  
1/1/2025-12/31/2025

### Student and Research Staff Supervision

PhD Students

- Ebenezer Yawlui (MS in Electrical Engineering, UMass Lowell), Aug. 2024-pres.
- Miracle Uwakwe (BS in Electrical Engineering), Aug. 2024-pres.

Masters Projects Supervised

- Panos Pardalidis, (MEng in Mechanical Engineering, UC Berkeley), Sep. 2023-May 2024
- Adam Duong, (MEng in Mechanical Engineering, UC Berkeley), Sep. 2023-May 2024
- Ben Margolis, (MEng in Mechanical Engineering, UC Berkeley), Sep. 2023-May 2024
- Jessica Boetticher, (MEng in Mechanical Engineering, UC Berkeley), Sep. 2023-May 2024

Undergraduate Research Assistants Supervised

- Albert Gan (BS in Mechanical Engineering, UConn), Sep. 2025-pres.
- Jonathan Hylton (BS in Electrical Engineering, UConn), Aug. 2025-pres.
- Nikki Le (BS in Computer Science, UConn), Aug. 2025-pres.
- Ryan Durkin (BS in Robotics Engineering, UConn), Aug. 2025-pres.
- Philip LeShane (BS in Robotics Engineering, UConn), Summer 2025-pres.
- Aiden Choi (BS in Computer Engineering, UConn), Dec. 2024-pres.
- Diego Castromonte (BS in Electrical Engineering, UConn), Dec. 2024-pres.
- Abigail Roach (BS in Robotics Engineering, UConn), Dec. 2024-pres.
- Elizabeth Amankwah (BS in Biomedical Engineering, UConn), Sep. 2024-May 2025.
- Lauren Guo (BS in Mechanical Engineering, UConn), Sep. 2024-May 2025
- Zion Jones (BS in Computer Science, UConn), Sep. 2024-May 2025
- Elle Amankwah (BS in Psychology, UConn), Sep. 2024-Dec. 2024
- Sanzhar Abatov (BS in Mechanical Engineering, UC Berkeley), Summer 2024
- Sarah Ornellas (BS in Mechanical Engineering and Biomedical Engineering, Yale), Summer 2019
- Phyllis Mugadza (BS in Mechanical Engineering, Yale), Summer 2018

Thesis Committee

- Nina Stefanovic, (PhD in Electrical and Computer Engineering, UConn), Dec 2024-pres.
- Tirth Thakar, (MS in Mechanical Engineering, UConn), April 2025

### Service

UConn Open House | September 2024 – Present  
*Robotics Program Presentation*

CITRIS CPAR/DREAM Seminar Series | December 2022 – July 2024  
*Seminar Coordinator Lead*

Pauli Murray College | September 2017 – June 2020  
*Head Graduate Affiliate*

Yale University Secretary's Student Advisory Committee | February 2018 – March 2020

Peer reviewer for the following journals

- IEEE Robotics and Automation Letters (RA-L)
- IEEE Transactions on Robotics (T-RO)
- IEEE Transactions on Neural Systems and Rehabilitation Engineering (TNSRE)
- IEEE Transactions on Haptics (ToH)
- IEEE Transactions on Human-Machine Systems (THMS)
- Journal of NeuroEngineering and Rehabilitation
- Nature Scientific Reports

Peer reviewer for the following conferences

- IEEE International Conference on Robotics and Automation (ICRA)
- IEEE International Conference on Rehabilitation Robotics (ICORR)
- IEEE International Conference on Biomedical Robotics and Biomechanics (BioRob)
- Myoelectric Controls Symposium (MEC)
- The Yale Undergraduate Research Journal (YURJ)

Professional Society Membership

- Institute of Electrical and Electronics Engineers (IEEE), Member

### **Invited Talks and Guest Lectures**

- *ECE Colloquium Series*, University of Connecticut, Oct. 2024
- *Seminar on Robotics & Haptics*, University of Lisbon (Portugal), Sep. 2024
- *University of Nevada – Las Vegas*, Department of Mechanical Engineering, Feb. 2024
- *Santa Clara University*, Department of Mechanical Engineering, Feb. 2024
- *Boston Dynamics AI Institute*, Apr. 2023
- *BAIR Robotics & Systems Workshop*, University of California – Berkeley, Jan. 2022
- *Guest Class Lecture*, Conte – West Hills Magnet School, Nov. 2014

### **Awards**

- BPA Professional Development Award – May 2024

#### Awards to advisees

- 3<sup>rd</sup> place, 2025 ASME SMRDC Student Mechanism & Robot Design Competition, awarded to Miracle Uwakwe, Aug. 2025
- Winner, 2024 Fung Institute Capstone Technical Leadership Award, awarded to Panos Pardalidis, Adam Duong, Ben Margolis, and Jessica Boetticher, May 2024

### **Teaching Experience**

Robotics Systems Laboratory: ECE 4161, University of Connecticut | Spring 2025  
*Instructor*

Controls Systems: ECE 4122, University of Connecticut | Fall 2024  
*Instructor*

MEng Capstone Project: ENGIN 296, UC Berkeley | Fall and Spring 2024  
*Mentor: "Next generation assistive wearable for everyday grasping with Spinal Cord Injury"*

Global Partners Institute US, New Haven, CT | July 2018 and 2019  
*Discussion Leader*

Columbia STEP, New Haven CT | Summer 2015 and 2019  
*Alumni Mentor*

Mechanical Design: MENG 185, Yale University | Spring 2016  
*Teaching Assistant*

Co-Op High School, New Haven, CT | November 2015 and 2017  
*Visiting Dance Teacher*

Columbia College/SEAS Tutoring Service, New York, NY | Spring 2014  
*Electrical Engineering Tutor*

Let's Get Ready (TFA affiliate), Dorchester, MA | Summer 2011  
*Head Math Coach*

### **Other Projects**

Hair Braiding start up, Berkeley, CA | July 2021 – June 2022  
*Lead Hardware Engineer*

Retina Camera and AI start up, New Haven, CT | May 2018 – December 2018  
*Lead Hardware Engineer*

Senior Capstone Project: BMEN 3920, Columbia University | September 2013 – May 2014  
*Group Member, Project: "DownRight"*