## Jayesh Jayashankar

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University of Maryland, College Park, MD Discration Tite: Adaptive pBCI-based Human-Robot Teaming using to optimize human performance Advisor: Dr. Rodolphe Gentili Master of Engineering, Robotics May 2022 University of Maryland, College Park, MD Bachelor of Technology, Electronics and Communication Engineering May 2017 SRM University, Chennai, India Research Experience Doctoral Researcher Research Experience Doctoral Researcher Research advisor: Dr. Rodolphe Gentili, College Park, MD Designed experiments to assess human mental workload during human-robot collaboration. Lead and assisted research studies involving EEG and behavioral data collections. Analyzed and processed EEG signals to obtain relevant messures of brain dynamics. Validated experiments the results using statistical methods. Mentored undergraduate students to employ scientific methods to conduct research. Research Assistan October 2021-July 2022 Neuromotor Control & Learning Laboratory, Dept. of Kinesiology, College Park, MD Delogled dolpect tracking capabilities for a humanoid robot to perform collaborative tasks. Delogled dolpect tracking capabilities for a humanoid robot to solve cognitive tasks efficiently. Research Assistan March-October 2021 Neuromechanics Laboratory, Fischell Dept. of Bioengineering, College Park, MD Assessed architectures to design a deep learning model to decode upper-limb movements of stroke survivors. Teaching & Mentorship Experience Graduate Teaching Assistant, Motor Control & Learning Depl. of Kinesiology, College Park, MD Assessed anchites hard exams. Assisted discussions index functions, and office hours. Graduate Teaching Assistant, Ovbor Control & Learning Depl. of Kinesiology, College Park, MD Assisted discussions and oper tears, unning experiments, validating data, and interpreting results. Graduate Teaching Assistant, Motor Control & Learning Depl. of Kinesiology, College Park, MD Assisted discussions involving topics such as rehabilitative and assistive devices, neural control, and BCIs. Assisted discussions	Education PhD, Neuroscience & Cognitive Science	Expected May 2027
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### **Summer Student Mentor**

Dept. of Kinesiology, College Park, MD

- Mentored multiple students as part of UMD's STAR/ADAPT summer program.
- Taught students to record EEG data and assess behavioral data.
- Assisted in designing student's posters as part of their program.

#### **Professional Experience**

Software Engineer

#### Fidelity Investments, Chennai, India

- Resolved issues on the Mainframe & Web application platforms in the business of equity compensation.
- Followed agile practices to solve technical issues by collaborating with teams across India and USA.
- Fixed code involving financial transactions followed by integration testing to validate fixes.
- Monitored and validated production deployments.
- Performed quality control on Company Match Projects in the 401(K) Retirement Plan Services.
- Designed codebase as per clients' requirements and validate the same through test cases.

#### Conference Presentations

- 1. Jayesh Jayashankar, Anna Packy, Arya Teymourlouei, Alexandra Shaver, Garrett Katz, James Reggia, James Purtilo, Rodolphe Gentili, "Assessment of a Novel Virtual Environment for Examining Cognitive-Motor Processes During Execution of Action Sequences in a Human-Robot Teaming Context", Human Computer Interaction International (HCII), July 2024, Washington DC.
- 2. Anna Packy, Jayesh Jayashankar, Arya Teymourlouei, Joshua Stone, Hyuk Oh, Garrett Katz, James Reggia, James Purtilo, Rodolphe Gentili, "*Neurocognitive Assessment Under Various Human-Robot Teaming Environments*", Engineering in Medicine and Biology Society (EMBC), July 2024, Orlando, Florida.
- 3. Jayesh Jayashankar, Li-Qun Zhang, "Combining CNN with LSTM for Real Time Decoding of Multi-Joint Arm Movements in Stroke Survivors", Rehabweek 2021, Abstract & Poster 171.

#### Publications (Conference Proceedings)

- 1. Jayesh Jayashankar, Anna Packy, Arya Teymourlouei, Alexandra Shaver, Garrett Katz, James Reggia, James Purtilo, Rodolphe Gentili Assessment of a Novel Virtual Environment for Examining Cognitive-Motor Processes During Execution of Action Sequences in a Human-Robot Teaming Context. In: Schmorrow, D.D., Fidopiastis, C.M. (eds) Augmented Cognition. HCII 2024. Lecture Notes in Computer Science, vol 14694. Springer, Cham.
- 2. Anna Packy, **Jayesh Jayashankar**, Arya Teymourlouei, Joshua Stone, Hyuk Oh, Garrett Katz, James Reggia, James Purtilo, Rodolphe Gentili, "Neurocognitive Assessment Under Various Human-Robot Teaming Environments", Engineering in Medicine and Biology Society (EMBC), 2024.
- 3. Jayesh Jayashankar, Anna Packy, Arya Teymourlouei, Hyuk Oh, Garrett Katz, James Reggia, James Purtilo, Rodolphe Gentili, "Cortical dynamics underlying team performance in human-robot collaborative work under varying task demand", ICRA 2025 (In-Review).

#### Honors & Awards

- 1. Best Paper Award for the 18th International Conference on Augmented Cognition, in the context of HCI International 2024, Washington DC, USA, 29 June 4 July 2024.
- 2. Funded by the Maryland Robotics Center's (MRC) pathways programto pursue research in the field of human-robot interaction and cognitive-motor neuroscience.

#### Professional Memberships

- 1. North American Society for the Psychology of Sport and Physical Activity (NASPSPA) member.
- 2. Collaborative Institutional Training Initiative (CITI) certification.

#### Skills

Programming: C++, C#, Python
 Technical: MS Office, MATLAB, ROS, OpenCV, Git, R, EEGLAB, MATLAB,
 Research: EEG Data Collection, Statistical Analysis, Planning & Designing Experiments, Manuscript Writing

July 2017-Aug 2020