# VISHNU SANGLI

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Research Interest: Learning based methods for robotics and whole body control, Representation Learning

## EDUCATION

**UNIVERSITY OF CALIFORNIA, BERKELEY** Berkeley, CA
B.A. in Computer Science, Physics May 2024
Cumulative GPA: 3.572/4.0; CS GPA: 3.87/4.0

**Relevant Coursework:**
Reinforcement Learning, Neural Networks, Machine Learning, Algorithms, Operating Systems, Digital Design
Electromagnetism and Optics, Quantum Mechanics, Particle Physics, Statistical and Thermal Physics, Analytic Mechanics

## RESEARCH AND PROFESSIONAL EXPERIENCE

**UNIVERSITY OF CALIFORNIA, BERKELEY** Berkeley, CA
Research Assistant at Hybrid Robotics September 2022 – Present
Advised by Prof. Koushil Sreenath
- Developing a framework for a generalized and robust joint-level locomotion controller for bipeds, quadrupeds, and humanoid robots.
- Developing robust learning-based controllers for agile Flapping Wing Micro-Aerial Vehicles (FMAVs)

**LAWRENCE BERKELEY NATIONAL LABORATORY** Berkeley, CA
Undergraduate Research Apprentice at Nachman Group February 2023 – August 2024
Advised by Dr. Benjamin Nachman
- Developing a GAN generative network to replace the hadronization pipeline in High Energy Physics particle collision event simulators.
- Researched latent representations of elementary particles for machine learning applications in High Energy Physics.
- Achieved a two-fold improvement in downstream task performance, enabling models to effectively fit particle feature distributions.

**DR. SRINIVAS' LAB (VISION SCIENCES), INDIANA UNIVERSITY** Bloomington, IN
Research Assistant June 2022 – August 2023
Advised by Dr. S.P. Srinivas
- Led the experimental team of 6 for the clinical data collection and analysis of eye blinks through Electrooculogram readings. Presented findings at the AOPT 2023 conference.
- Implemented vision-based segmentation and clustering algorithms for eye blink analysis, enhancing the understanding of blink patterns and characteristics.
- Contributed to designing and implementing general-use data analysis tools to facilitate advanced analysis and interpretation of blink data.

**UDI UDI - DATING APP** San Jose, CA
Machine Learning Intern June 2022 – August 2022
- Developed NLP sentiment analysis models with varying sensitivity levels to maintain a positive user experience.
- Engineered an ML recommender system that leverages user characteristics and preferences to facilitate accurate and personalized user matching.
- Designed backend infrastructure for user registration and flutter app integration.

**LAWRENCE BERKELEY NATIONAL LABORATORY** Berkeley, CA
Undergraduate Research Apprentice at ATLAS Group September 2021 – August 2022
Advised by Dr. Karol Krizka
- Investigated GNN-based jet taggers (classifiers for high energy physics) to identify H(bb) decay events.

- Trained taggers matched benchmark Xbb tagger at a fraction of the computational cost. Presented findings at an internal ATLAS Group meeting.

## SELECTED PUBLICATIONS

**(In Progress) Vishnu Sangli**, Zhongyu Li, Xue Bin Peng, Koushil Sreenath. GenlocoV2: Generalized Multi-Embodiment towards Learning for Locomotion

**(In Progress) Vishnu Sangli,** Jay Chan, Xiangyang Ju, Adam Kania, Benjamin Nachman, Andrzej Siódmok. Exploring hadron latent space schemes for fitting hadronization characteristics

Jiaze Cai*, **Vishnu Sangli***, Mintae Kim, Koushil Sreenath. Learning-based Trajectory Tracking for Bird-inspired Flapping-Wing Robots. *Under Review* (2024). [PrePrint]

**Vishnu Sangli**, Sirisha Tadepalli, Chetana Krishnan, V. Thenmozhi, PF. Hadiya, K. Shivaram, A. Anand, Sudhir, RR, Surekha Paneerselvam, SP. Srinivas. Precision and fast sampling electrooculogram for recording blinking kinematics
Oral Presentation at *Association for Ocular Pharmacology and Therapeutics (AOPT) XVI Biennial Meeting 2023 (2023)*

Jay Chan, Xiangyang Ju, Adam Kania, Benjamin Nachman, **Vishnu Sangli**, Andrzej Siódmok. Integrating Particle Flavor into Deep Learning Models for Hadronization. *Under Review* (2023). [PrePrint]

Jay Chan, Xiangyang Ju, Adam Kania, Benjamin Nachman, **Vishnu Sangli**, Andrzej Siódmok. Fitting a Deep Generative Hadronization Model, *Journal of High Energy Physics. 2023, 84 (2023).* [Paper]

Sagarika Valluri, **Vishnu Sangli**. A new approach to Habitability using obliquity and compartmentalised Habitable Zones on planetary surfaces through Vplanet and ROCKE 3D modelling
Poster Presentation at *AGU Fall Meeting 2019 (2019)*

**Vishnu Sangli**. Habitability Timeline of Venus: Past and Present
Poster Presentation at *AbSciCon 2019 (2019)*

## FUNDING & AWARDS

**AOPT Travel Award** 2023
Travel Award for the AOPT 2023 Conference