

Sudeep Dasari

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EDUCATION

UNIVERSITY OF CALIFORNIA: BERKELEY | BS IN ELECTRICAL ENGINEERING AND COMPUTER SCIENCE

College of Engineering | Expected May 2019 | Berkeley, CA

Dean's List (4/6 Semesters) • Honors to Date May 11, 2018 • Cum. GPA: 3.933 / 4.0 • Member of Eta Kappa Nu since 2016

SELECTED COURSEWORK

- Operating Systems and System Programming
- Probability and Random Processes
- Optimization Models in Engineering
- Efficient Algorithms and Intractable Problems
- Introduction to Machine Learning
- Designing, Visualizing and Understanding Deep Neural Networks
- Linear System Theory (Currently Enrolled)
- Deep Reinforcement Learning (Currently Enrolled)

UNDERGRADUATE RESEARCH

ROBOTICS AI & LEARNING LAB | UNDERGRADUATE STUDENT RESEARCHER

August 2017 – Present | Berkeley, CA

I work in Professor Sergey Levine's lab. My research focuses on developing new robotic vision and learning algorithms.

VISUAL FORESIGHT: MODEL-BASED DEEP REINFORCEMENT LEARNING FOR VISION-BASED ROBOTIC CONTROL

- Demonstrated that visual prediction based control algorithms (trained in an unsupervised fashion) can generalize across a diverse set of objects and tasks
- Project code and video available here: <https://sites.google.com/view/visualforesight>

ROBUSTNESS VIA RETRYING

- Development of closed loop visual control algorithm which allows for more precise robotic planning using raw video streams
- Benchmarked various approaches (including our own) on a Sawyer robot
- Project code and video available here: <https://sites.google.com/view/robustness-via-retrying/home>

DOMAIN ADAPTIVE META-LEARNING

- Helped develop and test techniques that allow robots to imitate humans performing various tasks (like picking or pushing) given one successful example demonstration
- Project code and video available here: <https://sites.google.com/view/daml>

DEEP LEARNING FOR ROBOTICS NIPS DEMO

- Built a demonstration of new research algorithms on real world Sawyer robot
- Presented the demo at NIPS 2017 in Long Beach CA. It was also featured in various media outlets including the New York Times ("How Robot Hands Are Evolving to Do What Ours Can")
- Link to project website: http://rail.eecs.berkeley.edu/nips_demo.html

EXPERIENCE

LOS ALAMOS NATIONAL LAB | ENGINEERING INSTITUTE INTERN

May 2016 – August 2016 | Los Alamos, NM

- Extended previous computer vision pipeline to work in scenarios with significant rigid body motion in the scene
- Wrote object tracking and stabilization code using Python and OpenCV

LOS ALAMOS NATIONAL LAB | ENGINEERING INSTITUTE INTERN

December 2016 – January 2017 | Los Alamos, NM

- Developed prototype augmented reality system to reduce human error when working with dangerous material
- Silicon-retina hardware used to track dummy cans of 'hazardous' material

- Microsoft HoloLens used to present each user with relevant information on a “floating card” above each can

LOS ALAMOS NATIONAL LAB | STUDENT RESEARCH FELLOW

May 2017 – August 2017 | Los Alamos, NM

- Built a GPU accelerated C++ codebase to capture, calibrate, and process raw data from an experimental camera
- Developed OpenGL viewer which animated and displayed results
- Presented project at 2018 IMAC Conference

JOURNAL AND CONFERENCE PUBLICATIONS

- Ebert, F., **Dasari, S.**, Lee, A. X., Levine, S., & Finn, C. (2018, October). Robustness via Retrying: Closed-Loop Robotic Manipulation with Self-Supervised Learning. In Conference on Robot Learning (pp. 983-993).
- Yu, T., Finn, C., Xie, A., **Dasari, S.**, Zhang, T., Abbeel, P., & Levine, S. (2018). One-Shot Imitation from Observing Humans via Domain-Adaptive Meta-Learning. Robotics: Science and Systems (RSS), 2018
- Finn, C., Ebert, F., Yu, T., Xie, A., **Dasari, S.**, Abbeel, P., & Levine, S. Deep Robotic Learning using Visual Imagination and Meta-Learning. Neural Information Processing Seminar Demonstration Track, 2017.
- **Dasari, S.**, Dorn, C., Yang, Y., Larson, A., & Mascareñas, D. (2018). A framework for the identification of full-field structural dynamics using sequences of images in the presence of non-ideal operating conditions. Journal of Intelligent Material Systems and Structures, 1045389X17754271.
- Chesebrough, B., **Dasari, S.**, Green, A., Yang, Y., Farrar, C. R., & Mascareñas, D. (2019). Light Field Imaging of Three-Dimensional Structural Dynamics. In Structural Health Monitoring, Photogrammetry DIC, Volume 6 (pp. 101-108). Springer, Cham.
- **Dasari, S.**, Dorn, C., Yang, Y., Farrar, C., Larson, A., & Mascareñas, D. (2017). Extraction of full-field structural dynamics from digital video measurements in presence of large rigid body motion. In Shock Vibration, Aircraft/Aerospace, Energy Harvesting, Acoustics Optics, Volume 9 (pp. 91-95). Springer, Cham.
- Dorn, C., **Dasari, S.**, Yang, Y., Farrar, C., Kenyon, G., Welch, P., & Mascareñas, D. (2018). Efficient Full-Field Vibration Measurements and Operational Modal Analysis Using Neuromorphic Event-Based Imaging. Journal of Engineering Mechanics, 144(7), 04018054.

PRE-PRINTS

- Ebert, F., Finn, C., **Dasari, S.**, Xie, A., Lee, A. X., & Levine, S. (2018, December). Visual Foresight: Model-Based Deep Reinforcement Learning for Vision-Based Robotic Control. arXiv Preprint arXiv:1812.00568.

TEACHING EXPERIENCE

INDEPENDENT COURSE TUTOR

September 2017 – March 2018 | Berkeley, CA

- Registered as a tutor with Berkeley EECS department. Helped students with both the upper-division algorithms class and intro EE class at Berkeley
- Helped 3 students prepare for midterms, go over past homework, and generally learn the material

UNDERGRADUATE STUDENT INSTRUCTOR | TA FOR BERKELEY'S COMPUTER GRAPHICS CLASS (CS 184)

Spring 2019 Semester | Berkeley, CA

I have signed on with the computer graphics course staff as a TA for next semester. I'm excited to teach students the foundations of modern graphics, as well as one of my favorite academic topics - ray tracing!

SKILLS

PROGRAMMING LANGUAGES

Over 2000 lines:

Java • Python • C++

Over 500 lines:

C • Matlab • C#

Familiar:

HTML • Android • CUDA

FRAMEWORKS

Libraries and Tools:

Git • Apache Spark • TensorFlow • PyTorch •
OpenCV • OpenGL • DirectX • ROS

Operating Systems

Windows • Ubuntu