Christine Allen-Blanchette

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RESEARCH INTERESTS

Deep learning, geometry, dynamical systems & probabilistic graphical models

ACADEMIC APPOINTMENTS

Princeton University — Princeton, NJ
Postdoctoral Researcher, Presidential Postdoctoral Research Fellows — *August 2020 - Present*

EDUCATION

University of Pennsylvania — *Philadelphia, PA*
Ph.D., Computer Information Science — *Spring 2020*
Thesis: Leveraging Symmetric Structure for Improved Learning in Convolutional Neural Networks
Advisor: Prof. Kostas Daniilidis
M.S., Robotics — *May 2013*

San Jose State University — *San Jose, CA*
B.S. Computer Engineering — *August 2011*
B.S. Mechanical Engineering — *August 2011*

PUBLICATIONS

C. Esteves, Y. Xu, **C. Allen-Blanchette**, K. Daniilidis, *Equivariant Multi-View Networks*, ICCV, 2019
C. Esteves, **C. Allen-Blanchette**, A. Makadia, K. Daniilidis, *Learning SO(3) Equivariant Representations with Spherical CNNs*, ECCV, 2018 **(Oral)**
C. Esteves, **C. Allen-Blanchette**, X. Zhou, K. Daniilidis, *Polar Transformer Networks*, ICLR, 2018
S. Leonardos, **C. Allen-Blanchette**, J. Gallier, *Motion Interpolation in SIM(3)*, IEEE ICRA, 2015

Publications In Preparation

C. Allen-Blanchette, S. Veer, A. Majumdar, N. Leonard, *LagNet: Lagrangian Neural Network*
C. Allen-Blanchette, K. Daniilidis, *Joint Estimation of Image Representations and their Lie Invariants*
C. Allen-Blanchette, P. Patricia, *Unequal Exposures: An Application of Convolutional Neural Networks to Predict Neighborhood Physical and Social Characteristics*
C. Allen-Blanchette, Katia Schwerzmann, J. Gallion, *Prior Understandings: Algorithms and the Justice System*

HONORS & AWARDS

Presidential Postdoctoral Research Fellows, Princeton University, 2019
Fontaine Fellowship, University of Pennsylvania, 2012-2019
FOCUS Fellows, Georgia Institute of Technology, 2016
NextProf Future Faculty Workshop, University of Michigan, 2015
NSF IGERT Complex Scene Perception Fellowship, University of Pennsylvania, 2012-2014
GEM Fellowship, University of Pennsylvania, 2012
Summer Undergraduate Research Fellowship, Georgia Institute of Technology, 2010
Tau Beta Pi Honor Society, San Jose State University, 2008
David A. Brown Fellowship in Mechatronics, San Jose State University, 2007
Pi Tau Sigma Honor Society, San Jose State University, 2006

PATENTS

(WO2009086109) Systems and Methods for Dynamic Alignment Beam Calibration
A method for performing DA (Dynamic Alignment) beam calibration in a plasma processing system is provided.
(US8751047B2) Systems and Methods for Calibrating End Effector Alignment in a Plasma Processing System
A method for calibrating alignment of an end effector with respect to a chuck in a plasma processing system is provided.
(WO2009086164) Systems and Methods for Calibrating End Effector Alignment Using at Least a Light Source
A method for calibrating alignment of an end effector with respect to a chuck in a plasma processing system is provided.
(WO2009086042) Arrangements and Methods for Determining Positions and Offsets
A method for determining positions and offsets in a plasma processing system, the plasma processing system including at least a chuck and an upper electrode is provided.

PRESENTATIONS

"LagNet: Lagrangian Neural Networks", *Princeton University*, Princeton, NJ *April 6, 2020*
"Equivariant Filtering in CNNs", *Princeton University*, Princeton, NJ *January 31, 2020*
"Design and Use of Equivariant Filters in CNNs", *University of Pennsylvania, Kod*lab*, Philadelphia, PA, *June 26, 2018*
"3D Object Classification", *NSF-IUCRC ROSE-HUB*, Minneapolis, MN, *April 26-27, 2018*
"Equivariant networks", *NSF-IUCRC ROSE-HUB*, Denver, CO, *November 16-17, 2017*
"Motion Interpolation in SIM(3)", *GEM Annual Board Meeting and Conference*, San Diego, CA, *August 13-15, 2014*

RESEARCH EXPERIENCE

University of Pennsylvania — Philadelphia, PA
Graduate Researcher, GRASP Laboratory — *June 2012 - August 2020*

Georgia Institute of Technology — Atlanta, GA
Undergraduate Researcher, HumAnS Lab — *May - July 2010*

PROFESSIONAL EXPERIENCE

BAE Systems — Santa Clara, CA
Software Engineering Intern — *June 2009 - April 2010*
Developed software emulators for vehicle components

Lam Research — Fremont, CA
Mechatronics Intern — *July 2007 - August 2008*
Developed techniques for improved silicon wafer centering

San Jose State University — San Jose, CA
Robotics Course - Curriculum Designer, Mechatronics Lab — *February 2007 - January 2008*

San Jose State University — San Jose, CA
Robotics Course - Software Developer, Mechatronics Lab — *June - August 2006*

TEACHING EXPERIENCE

University of Pennsylvania
Teaching Assistant, *CIS 580: Machine Perception*, Spring 2018
Trainee, *Course in College Teaching*, Spring 2017
Course Developer and Teaching Assistant, *edX Robotics: Vision Intelligence and Machine Learning*, Summer 2017
Lecturer, *Research Experience for Teachers (RET) - Linear Algebra*, Summer 2016
Teaching Assistant, *CIS 371: Computer Organization and Design*, Spring 2014
Teaching Assistant, *COGS001: Introduction to Cognitive Science*, Fall 2013

OUTREACH

AMP GEM GRAD Lab, *Why Graduate School? - Panelist*, April 6, 2018
Data for Black Lives Conference, *Ask a Data Scientist - Panelist*, November 17-19, 2017
DataRescue Philly, *Seeder/Sorter*, January 14, 2017
Research Experience for Teachers (RET), *Mentor*, Summer 2016
iPraxis, *Coding Scienteer*, January 2015 - May 2015
West Philly Tutoring Project (WPTP), *Math Tutor (4th grade)*, September 2014 - December 2014
Google Hack212: Urban Innovation, *Hacker*, November 5-7, 2011

ACTIVITIES

Fontaine Society, *Alum*
National Consortium for Graduate Degrees for Minorities in Engineering and Science (GEM), *Alum*
National Society of Black Engineers (NSBE), *Alum*
Society of Women Engineers (SWE), *Member*
University of Pennsylvania Womens Ice Hockey, *Alum*