

Bryan A. Plummer

Computer Vision

EDUCATION

- 2013 – PRESENT **University of Illinois at Urbana Champaign, Urbana, IL**
PHD IN COMPUTER SCIENCE
Advisor: Svetlana Lazebnik
- 2011 – 2013 **University of Illinois at Urbana Champaign, Urbana, IL**
BS IN COMPUTER SCIENCE
- 2009 – 2011 **Mesa Community College, Mesa, AZ**
ASSOCIATE IN SCIENCE, ASSOCIATE IN ARTS

PUBLICATIONS

- Plummer, B. A.; Mallya, A.; Cervantes, C. M.; Hockenmaier, J.; Lazebnik, S. “Phrase Localization and Visual Relationship Detection with Comprehensive Linguistic Cues.” *arXiv:1611.06641*, 2016.
- Plummer, B. A.; Wang, L.; Cervantes, C. M.; Caicedo, J. C.; Hockenmaier, J.; Lazebnik, S. “Flickr30k Entities: Collecting Region-to-Phrase Correspondences for Richer Image-to-Sentence Models.” *IJCV*, 2016 (To Appear).
- Tsatsoulis, P. D.; Plummer, B. A.; Forsyth, D. “Visual Analogies: A Framework for Defining Aspect Categorization.” *ECCV TASK-CV Workshop*, 2016. Workshop Best Paper Award.
- Tommasi, T.; Mallya, A.; Plummer, B. A.; Lazebnik, S.; Berg, A.; Berg, T. “Solving Visual Madlibs with Multiple Cues.” *BMVC*, 2016.
- Plummer, B. A.; Wang, L.; Cervantes, C. M.; Caicedo, J. C.; Hockenmaier, J.; Lazebnik, S. “Flickr30k Entities: Collecting Region-to-Phrase Correspondences for Richer Image-to-Sentence Models.” *ICCV*, 2015.

PATENTS

- Plummer, B. A.; Brown, P.; He, J.; Fields, B.; Roberson, S.; Cielocha, S.; Peng, J. “Systems and Methodologies for Real-Time Driver Gaze Location Determination and Analysis Utilizing Computer Vision Technology.” US Patent 9,275,532. March 2016
- Fields, B. M.; Jibo, H.; Nepomuceno, J.; Roberson, S.; Plummer, B. A.; Houdek, K.; Jain, N. “Real-time Driver Observation and Scoring for Driver’s Education.” US Patent 8,876,535, 9,275,552. November 2014, March 2016.
- Plummer, B. A.; Cross, D.; Tofte, N. “Method of Estimating Damage to a Roof.” US Patent 9,262,564. February 2016.
- Plummer, B. A.; Cross, D.; Tofte, N. “Systems and Methods for Assessing a Roof and Generating Models.” US Patent 9,098,655. August 2015.
- Plummer, B. A.; Cross, D. “Systems and Methods for Assessing Roofs.” US Patent 8,874,454. October 2014.
- Plummer, B. A.; Cross, D. “Systems and Methods for Assessing Property Damage.” US Patent 8,756,085. June 2014.

WORK EXPERIENCE

- Software Engineering Intern, PhD, Google** MAY 2016 – AUGUST 2016
Developed vision-language approaches for tasks using video data.
- Software Developer Intern, A9** MAY 2015 – AUGUST 2015
Investigated possible alternative approaches to existing algorithms developed by the Visual Search team based on recent advances in image description.
- IT/Systems Intern, State Farm Research and Development Center** AUGUST 2014 – MAY 2015
Advisor to three computer vision projects in development at the center. Contributions included high level discussions on the methods and evaluation procedures as well as implementation details.
- Summer Research Program Intern, MIT Lincoln Laboratory** JUNE 2014 – AUGUST 2014
Developed an approach using active learning for object recognition on natural images with an emphasis on finding rare object categories.
- Graduate Research Assistant, University of Illinois at U-C** AUGUST 2013 – PRESENT
Investigating problems at the intersection of Vision and Language under Prof. Svetlana Lazebnik.
- IT/Systems Intern, State Farm Research and Development Center** NOVEMBER 2012 – AUGUST 2013
Built a system to use 3D scans of objects to detect anomalies and created a program to do real time ($\geq 5\text{Hz}$) gaze tracking using low resolution images on computationally limited platforms.
- JPLSIP Intern, NASA Jet Propulsion Laboratory** JUNE 2012 – AUGUST 2012
Created a class that performs image matching using phase correlation to register an image and then align

them as well as create an interface for HDF-EOS 5 images

Student SDE Intern, *Aqueous Solutions, LLC*

AUGUST 2011 – JANUARY 2013

Rewrote the installer, added automatic updating, and contributed to many other features in applications developed by the company.

Undergraduate Research Assistant, *University of Illinois at U-C*

SEPTEMBER 2011 – DECEMBER 2012

Explored methods to incorporate illumination information to improve the geometric interpretation of a single image under Prof. Derek Hoiem.

SIES Intern, *NASA Goddard Space Flight Center*

JUNE 2011 – AUGUST 2011

Conducted a parameter search to produce specific results in a model that simulates snowflake growth and added GPU processing capabilities.

HONORS

- 2015 †NSF Graduate Research Fellowship Honorable Mention
- 2014,2015 3M Foundation Fellowship
- 2013 UIUC Research Park Most Outstanding Undergraduate Intern Finalist
- 2012 †Barry M. Goldwater Scholar
- 2012 The Illinois Club Make-A-Difference Award
- 2011 †Coca-Cola Academic Team, Gold Scholar
- 2011 ‡All-Arizona Academic Team, First Team
- 2011 †Phi Theta Kappa Distinguished Chapter Officer Team
- 2011 †National Community College Aerospace Scholar
- 2011 †Presidential Volunteer Service Award, Gold Level
- 2011 ‡Phi Theta Kappa Most Distinguished Officer, Arizona Hall of Honor
- 2011 Mesa Community College Excellence in Service Award
- 2011 Five Star Competitive Edge Award
- 2011 MCC Honors Speaker, Academic Achievement Awards Keynote
- 2010,2011 MCC Honors in Action Award
- 2010 †Leaders of Promise, Phi Theta Kappa Honor Society
- 2010 ‡UCAN Serve Impact Scholar
- 2010 Mesa Community College Service Scholar
- 2010 Academic Achievement Award, Psychology Department
- 2009 Mesa Community College Foundation Scholarship

† National award ‡ Regional award

LEADERSHIP AND SERVICE

- 2014 – 2015 CS Grad Peer Mentor
- 2013 – 2016 CS Grad Ambassador
- 2013 – 2015 ACM UIUC Student Chapter, SigBot and SigArt Project Mentor
- 2012 – 2013 ACM UIUC Student Chapter, SigBot Chair
- 2012 – 2013 UIUC CS Department Grievance Committee, Student Representative
- 2011 – 2012 18th Reflections Projections Conference, Speakers Committee
- 2011 17th Reflections Projections Conference, Logistics Committee
- 2010 – 2011 Phi Theta Kappa Honor Society MCC Chapter, VP of Leadership
- 2009 – 2011 Arizona Science Center, AmeriCorps Member
- 2010 Phi Theta Kappa Honor Society MCC Chapter, VP of Administration
- 2010 Arizona Governor's Office, LeaderCorps Member
- 2010 Arizona National and Community Service Conference, Logistics Committee
- 2010 Orangewood Elementary School, STEM Club Advisor
- 2009 – 2010 MCC Beautification Project, Committee Member
- 2009 – 2010 Arizona Department of Education, L&S Camp Team Leader
- 2009 – 2010 MCC Service Learning Advisory Board, Student Member
- 2009 – 2010 MCC Community Strengthening Allies, Student Member