

# Bryan A. Plummer

Computer Vision

## EDUCATION

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- 2013 – 2018 **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

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- Xu, H.; He, K.; Plummer, B. A.; Sigal, L.; Sclaroff, S.; Saenko, K. "Multilevel Language and Vision Integration for Text-to-Clip Retrieval." *AAAI*, 2019.
- Plummer, B. A.; Kiapour, M. H.; Zheng, S.; Piramuthu, R. "Give me a hint! Navigating Image Databases using Human-in-the-loop Feedback." *WACV*, 2019.
- Vasileva, M. I.; Plummer, B. A.; Dusad, K.; Rajpal, S.; Kumar, R.; Forsyth, D. "Learning Type-Aware Embeddings for Fashion Compatibility." *ECCV*, 2018.
- Plummer, B. A.; Kordas, P.; Kiapour, M. H.; Zheng, S.; Piramuthu, R.; Lazebnik, S. "Conditional Image-Text Embedding Networks." *ECCV*, 2018.
- Tommasi, T.; Mallya, A.; Plummer, B. A.; Lazebnik, S.; Berg, A.; Berg, T. "Combining Multiple Cues for Visual Madlibs Question Answering." *IJCV*, 2018.
- Plummer, B. A.; Mallya, A.; Cervantes, C. M.; Hockenmaier, J.; Lazebnik, S. "Phrase Localization and Visual Relationship Detection with Comprehensive Image-Language Cues." *ICCV*, 2017.
- Plummer, B. A.; Brown, M.; Lazebnik, S. "Enhancing Video Summarization via Vision-Language Embedding" *CVPR*, 2017.
- 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*, 123(1):74-93, 2017.
- 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

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- 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

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**Postdoctoral Associate**, *Boston University*

APRIL 2018 – PRESENT

Focus on investigating video tasks such as action recognition and text-to-segment retrieval under Profs. Stan Sclaroff and Kate Saenko.

**Research Intern**, *Ebay Research Labs*

MAY 2017 – AUGUST 2017

Explored methods of using computer vision for e-commerce tasks including human-in-the-loop approaches.

**Teaching Assistant**, *University of Illinois at U-C*

JANUARY 2017 – MAY 2017

Assistant for the graduate level computer vision course taught by Prof. Derek Hoiem.

- 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 – APRIL 2018  
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.

## SELECTED HONORS

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- 2018 CVPR Outstanding Reviewer
- 2015 NSF Graduate Research Fellowship Honorable Mention
- 2014,2015 3M Foundation Fellowship
- 2012 Barry M. Goldwater Scholar

## SELECTED LEADERSHIP AND SERVICE

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- REVIEWER TPAMI'15,'16; CVPR'17,'18,'19; ICCV'17; CHI'18; IJCV'18; ECCV'18
- FALL 2018 Guest Lecture: Intro to recognition (course on Image and Video Computing)
- 2018 Boston University AI4All Project Mentor
- 2016 UIUC CS Admissions Committee Graduate Application Reviewer
- 2014 – 2015 UIUC CS Grad Peer Mentor
- 2013 – 2018 UIUC CS Grad Ambassador
- 2013 – 2015 ACM UIUC Student Chapter, SigBot and SigArt Project Mentor
- 2009 – 2011 Arizona Science Center, AmeriCorps Member
- 2010 Orangewood Elementary School, STEM Club Advisor
- 2009 – 2010 Arizona Department of Education, L&S Camp Team Leader