Jia-Bin Huang

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Education

2012–2016 **Ph.D.**, *University of Illiniois, Urbana-Champaign*, Illinois.
Electrical and Computer Engineering, Coordinated Science Lab
Advisor: Narendra Ahuja ⓘ link
Thesis: Visual Analysis and Synthesis with Physically Grounded Constraints ⓘ link
UIUC Graduate College Dissertation Completion Fellowship

2010–2012 **Masters of Science**, *University of Illiniois, Urbana-Champaign*, Illinois.
Electrical and Computer Engineering, Coordinated Science Lab
Thesis: Saliency Detection via Divergence Analysis: A Unified Perspective
ICPR 2012 Best Student Paper Award
Advisor: Narendra Ahuja ⓘ link

2002–2006 **Bachelor of Science**, *National Chiao-Tung University*, Hsin-Chu, Taiwan.
Department of Electronics Engineering
Undergraduate thesis: Information Preserving Color Transformation for the Colorblind
Advisor: Sheng-Jyh Wang ⓘ link

Work Experience

August 2016– **Electrical and Computer Engineering, Virginia Tech**.
Assistant Professor

Summer 2020 **Facebook, Seattle**.
Visiting Research Scientist in the Computational Photography group. Host: Johannes Kopf

Summer 2019 **Facebook, Seattle**.
Visiting Research Scientist in the Computational Photography group. Host: Johannes Kopf

Summer 2014 **Disney Research Pittsburgh**.
Research Intern. Mentor: Leonid Sigal and Sung Ju Hwang

Summer 2013 **Multimedia, Interaction, and Communication (MIC) Group, Microsoft Research**.
Research Intern. Mentor: Zhengyou Zhang

Summer 2012 **Interactive Visual Media (IVM) Group, Microsoft Research**.
Research Intern. Mentor: Johannes Kopf and Sing Bing Kang

2010–2016 **Electrical and Computer Engineering, University of Illinois, Urbana-Champaign**.
Research Assistant. Mentor: Narendra Ahuja

Spring 2009 **Electrical Engineering and Computer Science, University of California, Merced**.
Visiting student. Mentor: Ming-Hsuan Yang

2008 – 2009 **Institute of Information Science, Academia Sinica**.
Research Assistant. Mentor: Chu-Song Chen

2005–2006 **Electronics Engineering, National Chiao-Tung University**.
Research Assistant. Mentor: Sheng-Jyh Wang

Publications (ⓘ Google Scholar profile)

Journal papers

TOG 2020 **Consistent Video Depth Estimation**.
Xuan Luo, Jia-Bin Huang, Richard Szeliski, Kevin Matzen, Johannes Kopf
ACM Transactions on Graphics (Proceedings of SIGGRAPH 2020)   ⓘ paper ⓘ project

PAMI 2020	**Show, Match and Segment: Joint Weakly Supervised Learning of Semantic Matching and Object Co-segmentation**.
	Yun-Chun Chen, Yen-Yu Lin, Ming-Hsuan Yang, and Jia-Bin Huang
	IEEE Transactions on Pattern Analysis and Machine Intelligence, 2020 ⓘ paper ⓘ project
IJCV 2020	**DRIT++: Diverse Image-to-Image Translation via Disentangled Representations**.
	Hsin-Ying Lee, Hung-Yu Tseng, Qi Mao, Jia-Bin Huang, Yu-Ding Lu, Maneesh Singh, Ming-Hsuan Yang
	International Journal of Computer Vision, 2020 ⓘ paper ⓘ project
IJCV 2020	**Tracking Persons-of-Interest via Unsupervised Representation Adaptation**.
	Shun Zhang, Jia-Bin Huang, Jongwoo Lim, Yihong Gong, Jinjun Wang, Narendra Ahuja, and Ming-Hsuan Yang
	International Journal of Computer Vision, 2020 ⓘ paper ⓘ project
PAMI 2019	**Progressive Representation Adaptation for Weakly Supervised Object Localization**.
	Dong Li, Jia-Bin Huang, Yali Li, Shengjin Wang, and Ming-Hsuan Yang
	IEEE Transactions on Pattern Analysis and Machine Intelligence, 2019 ⓘ paper ⓘ project
PAMI 2019	**Joint Image Filtering with Deep Convolutional Networks**.
	Yijun Li, Jia-Bin Huang, Narendra Ahuja, and Ming-Hsuan Yang
	IEEE Transactions on Pattern Analysis and Machine Intelligence, 2019 ⓘ paper ⓘ project
TOG 2018	**Multi-view Wire Art**.
	Kai-Wen Hsiao, Jia-Bin Huang, and Hung-Kuo Chu
	ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia 2018) ⓘ paper ⓘ project
	Oral Presentation
PAMI 2018	**Fast and Accurate Image Super-Resolution with Deep Laplacian Pyramid Networks**.
	Wei-Sheng Lai, Jia-Bin Huang, Narendra Ahuja, and Ming-Hsuan Yang
	IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI), 2018 ⓘ paper ⓘ project
PAMI 2018	**Robust Visual Tracking via Hierarchical Convolutional Features**.
	Chao Ma, Jia-Bin Huang, Xiaokang Yang, and Ming-Hsuan Yang
	IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI), 2018 ⓘ paper ⓘ project
IJCV 2018	**Adaptive Correlation Filters with Long-Term and Short-Term Memory for Object Tracking** .
	Chao Ma, Jia-Bin Huang, Xiaokang Yang, and Ming-Hsuan Yang
	International Journal of Computer Vision (IJCV), 2018 ⓘ paper ⓘ project
CVIU 2018	**Ensemble of Convolutional Neural Networks for Pose Estimation**.
	Yuki Kawana, Norimichi Ukita, Jia-Bin Huang, and Ming-Hsuan Yang
	Computer Vision and Image Understanding (CVIU), 2018 ⓘ paper
TOG 2016	**Temporally Coherent Completion of Dynamic Video**.
	Jia-Bin Huang, Sing Bing Kang, Narendra Ahuja, and Johannes Kopf
	ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia 2016) ⓘ paper ⓘ project
	Oral Presentation
TOG 2014	**Image Completion using Planar Structure Guidance**.
	Jia-Bin Huang, Sing Bing Kang, Narendra Ahuja, and Johannes Kopf
	ACM Transactions on Graphics (Proceedings of SIGGRAPH 2014) ⓘ paper ⓘ project
	Oral Presentation
SPL 2007	**Information Preserving Color Transformation for Protanopia and Deuteranopia**.
	Jia-Bin Huang, Yu-cheng Tseng, Se-In Wu, and Sheng-Jyh Wang
	IEEE Signal Processing Letters, Vol. 14, No.10, October 2007 ⓘ paper ⓘ project

Conference papers

ECCV 2020	**Flow-edge Guided Video Completion**.
	Chen Gao, Ayush Saraf, Jia-Bin Huang, and Johannes Kopf
	Proceedings of European Conference on Computer Vision, 2020 ⓘ paper ⓘ project
ECCV 2020	**DRG: Dual Relation Graph for Human-Object Interaction Detection**.
	Chen Gao, Jiarui Xu, Yuliang Zou, Jia-Bin Huang
	Proceedings of European Conference on Computer Vision, 2020 ⓘ paper ⓘ project
ECCV 2020	**Semantic View Synthesis**.
	Hsin-Ping Huang, Hung-Yu Tseng, Hsin-Ying Lee, and Jia-Bin Huang
	Proceedings of European Conference on Computer Vision, 2020 ⓘ paper ⓘ project
ECCV 2020	**NAS-DIP: Learning Deep Image Prior with Neural Architecture Search** .
	Yun-Chun Chen, Chen Gao, Esther Robb, and Jia-Bin Huang
	Proceedings of European Conference on Computer Vision, 2020 ⓘ paper ⓘ project

ECCV 2020	**Shuffle and Attend: Video Domain Adaptation**. Jinwoo Choi, Gaurav Sharma, Samuel Schulter, and Jia-Bin Huang Proceedings of European Conference on Computer Vision, 2020 ⓘ paper ⓘ project
ECCV 2020	**FeatMatch: Feature-Based Augmentation for Semi-Supervised Learning**. Chia-Wen Kuo, Chih-Yao Ma, Jia-Bin Huang, and Zsolt Kira Proceedings of European Conference on Computer Vision, 2020 ⓘ paper ⓘ project
ECCV 2020	**Learning Monocular Visual Odometry via Self-Supervised Long-Term Modeling**. Yuliang Zou, Pan Ji, Quoc-Huy Tran, Jia-Bin Huang, and Manmohan Chandraker Proceedings of European Conference on Computer Vision, 2020 ⓘ paper ⓘ project
CVPR 2020	**3D Photography using Context-aware Layered Depth Inpainting**. Meng-Li Shih, Shih-Yang Su, Johannes Kopf, and Jia-Bin Huang Proceedings of IEEE Conference on Computer Vision and Pattern Recognition, 2020 ⓘ paper ⓘ project
CVPR 2020	**Learning to See Through Obstructions**. Yu-Lun Liu, Wei-Sheng Lai, Ming-Hsuan Yang, Yung-Yu Chuang, and Jia-Bin Huang Proceedings of IEEE Conference on Computer Vision and Pattern Recognition, 2020 ⓘ paper ⓘ project
CVPR 2020	**Single-Image HDR Reconstruction by Learning to Reverse the Camera Pipeline**. Yu-Lun Liu, Wei-Sheng Lai, Yu-Sheng Chen, Yi-Lung Kao, Ming-Hsuan Yang, Yung-Yu Chuang, and Jia-Bin Huang Proceedings of IEEE Conference on Computer Vision and Pattern Recognition, 2020 ⓘ paper ⓘ project
CVPR 2020	**Instance-aware Image Colorization**. Jheng-Wei Su, Hung-Kuo Chu, and Jia-Bin Huang Proceedings of IEEE Conference on Computer Vision and Pattern Recognition, 2020 ⓘ paper ⓘ project
ICLR 2020	**Cross-Domain Few-Shot Classification via Learned Feature-Wise Transformation**. Hung-Yu Tseng, Hsin-Ying Lee, Jia-Bin Huang, and Ming-Hsuan Yang Proceedings of International Conference on Learning Representations, 2020 ⓘ paper ⓘ project **Spotlight Oral Presentation**
WACV 2020	**Reducing Footskate in Human Motion Reconstruction with Ground Contact Constraints**. Yuliang Zou, Jimei Yang, Duygu Ceylan, Jianming Zhang, Federico Perazzi, and Jia-Bin Huang Proceedings of IEEE Winter Conference on Applications of Computer Vision, 2020 ⓘ paper ⓘ project
WACV 2020	**Unsupervised and Semi-Supervised Domain Adaptation for Action Recognition from Drones**. Jinwoo Choi, Gaurav Sharma,Manmohan Chandraker, and Jia-Bin Huang Proceedings of IEEE Winter Conference on Applications of Computer Vision, 2020 ⓘ paper ⓘ project
NeurIPS 2019	**Why Can't I Dance in the Mall? Learning to Mitigate Scene Bias in Action Recognition**. Jinwoo Choi, Chen Gao, Joseph C. E. Messou, and Jia-Bin Huang Proceedings of Neural Information Processing Systems, 2019 ⓘ paper ⓘ project
ICCV 2019	**Guided Image-to-Image Translation with Bi-Directional Feature Transformation**. Badour AlBahar and Jia-Bin Huang Proceedings of IEEE International Conference on Computer Vision, 2019 ⓘ paper ⓘ project
CVPR 2019	**CrDoCo: Pixel-level Domain Transfer with Cross-Domain Consistency**. Yun-Chun Chen, Yen-Yu Lin, Ming-Hsuan Yang, and Jia-Bin Huang Proceedings of IEEE Conference on Computer Vision and Pattern Recognition, 2019 ⓘ paper ⓘ project
CVPR 2019	**SAIL-VOS: Semantic Amodal Instance Level Video Object Segmentation - A Synthetic Dataset and Baselines**. Yuan-Ting Hu, Hong-Shuo Chen, Kexin Hui, Jia-Bin Huang, and Alexander Schwing Proceedings of IEEE Conference on Computer Vision and Pattern Recognition, 2019 ⓘ paper ⓘ project
ICLR 2019	**A Closer Look at Few-shot Classification**. Wei-Yu Chen, Yen-Cheng Liu, Zsolt Kira, Yu-Chiang Frank Wang, and Jia-Bin Huang Proceedings of International Conference on Learning Representation, 2019 ⓘ paper ⓘ project
AAAI 2019	**Connecting the Digital and Physical World: Improving the Robustness of Adversarial Attacks**. Steve T.K. Jan, Joseph Messou, Yen-Chen Lin, Jia-Bin Huang, and Gang Wang Proceedings of AAAI Conference on Artificial Intelligence, 2019 ⓘ paper ⓘ project
arXiv 2018	**Deep Paper Gestalt**. Jia-Bin Huang arXiv:1812.08775, 2018 ⓘ paper ⓘ project
ACCV 2018	**Deep Semantic Matching with Foreground Detection and Cycle-Consistency**. Yun-Chun Chen, Po-Hsiang Huang, Li-Yu Yu, Jia-Bin Huang, Ming-Hsuan Yang, and Yen-Yu Lin Proceedings of Asian Conference on Computer Vision, 2018 ⓘ paper ⓘ project

ECCV 2018	**Diverse Image-to-Image Translation via Disentangled Representations**. Hsin-Ying Lee, Hung-Yu Tseng, Jia-Bin Huang, Maneesh Singh, and Ming-Hsuan Yang Proceedings of European Conference on Computer Vision, 2018 ⓘ paper ⓘ project **Oral Presentation**
ECCV 2018	**DF-Net: Unsupervised Joint Learning of Depth and Flow using Cross-Task Consistency**. Yuliang Zou, Zelun Luo, and Jia-Bin Huang Proceedings of European Conference on Computer Vision, 2018 ⓘ paper ⓘ project
ECCV 2018	**Learning Blind Video Temporal Consistency**. Wei-Sheng Lai, Jia-Bin Huang, Oliver Wang, Eli Shechtman, Ersin Yumer, Ming-Hsuan Yang Proceedings of European Conference on Computer Vision, 2018 ⓘ paper ⓘ project
ECCV 2018	**VideoMatch: Matching based Video Object Segmentation**. Yuan-Ting Hu, Jia-Bin Huang, and Alexander Schwing Proceedings of European Conference on Computer Vision, 2018 ⓘ paper
ECCV 2018	**Unsupervised Video Object Segmentation using Motion Saliency-Guided Spatio-Temporal Propagation**. Yuan-Ting Hu, Jia-Bin Huang, and Alexander Schwing Proceedings of European Conference on Computer Vision, 2018 ⓘ paper ⓘ project
BMVC 2018	**iCAN: Instance-Centric Attention Network for Human-Object Interaction Detection**. Chen Gao, Yuliang Zou, and Jia-Bin Huang Proceedings of British Machine Vision Conference, 2018 ⓘ paper ⓘ project
ACCV 2018	**Deep Semantic Matching with Foreground Detection and Cycle-Consistency**. Yun-Chun Chen, Po-Hsiang Huang, Li-Yu Yu, Jia-Bin Huang, Ming-Hsuan Yang, and Yen-Yu Lin Proceedings of Asian Conference on Computer Vision 2018 ⓘ paper ⓘ project
CVPR 2018	**DeepMVS: Learning Multi-View Stereopsis** . Po-Han Huang, Kevin Matzen, Johannes Kopf, Narendra Ahuja, and Jia-Bin Huang Proceedings of IEEE Conference on Computer Vision and Pattern Recognition, 2018 ⓘ paper ⓘ project
NeurIPS 2017	**MaskRNN: Instance Level Video Object Segmentation**. Yuan-Ting Hu Jia-Bin Huang, and Alexander Schwing Proceedings of Neural Information Processing Systems, 2017 ⓘ paper ⓘ project
NeurIPS 2017	**Semi-Supervised Learning for Optical Flow with Generative Adversarial Networks**. Wei-Sheng Lai Jia-Bin Huang, and Ming-Hsuan Yang Proceedings of Neural Information Processing Systems, 2017 ⓘ paper ⓘ project
NeurIPS-W 2017	**Detecting Adversarial Attacks on Neural Network Policies with Visual Foresight**. Yen-Chen Lin, Ming-Yu Liu, Min Sun, and Jia-Bin Huang Proceedings of Neural Information Processing Systems Workshop, 2017 ⓘ paper ⓘ project
ASSETS 2017	**HOMER: an interactive system for home based stroke rehabilitation**. Aisling Kelliher Jinwoo Choi, Jia-Bin Huang, Kris Kitani, and Thanassis Rikakis Proceedings of International ACM SIGACCESS Conference on Computers and Accessibility, 2017 ⓘ paper ⓘ project
ICCV 2017	**Unsupervised Representation Learning by Sorting Sequences**. Hsin-Ying Lee Jia-Bin Huang, Maneesh Singh, and Ming-Hsuan Yang Proceedings of International Conference on Computer Vision, 2017 ⓘ paper ⓘ project
CVPR 2017	**Deep Laplacian Pyramid Networks for Fast and Accurate Single Image Super-Resolution**. Wei-Sheng Lai Jia-Bin Huang, Narendra Ahuja, and Ming-Hsuan Yang IEEE Conference on Computer Vision and Pattern Recognition, 2017 ⓘ paper ⓘ project
ECCV 2016	**Deep Joint Image Filter**. Yijun Li, Jia-Bin Huang, Narendra Ahuja, and Ming-Hsuan Yang European Conference on Computer Vision, 2016 ⓘ paper ⓘ project
ECCV 2016	**Tracking Persons-of-Interest via Adaptive Discriminative Features**. Shun Zhang, Yihong Gong, Jia-Bin Huang, Jongwoo Lim, Jinjun Wang, Narendra Ahuja, and Ming-Hsuan Yang European Conference on Computer Vision, 2016 ⓘ paper ⓘ project
ECCV 2016	**Unsupervised Visual Representation Learning by Graph-based Consistent Constraints**. Dong Li, Wei-Chih Hung, Jia-Bin Huang, Shengjin Wang, Narendra Ahuja, and Ming-Hsuan Yang European Conference on Computer Vision, 2016 ⓘ paper ⓘ project

CVPR 2016	**Detecting Migrating Birds at Night**.
	Jia-Bin Huang, Rich Caruana, Andrew Farnsworth, Steve Kelling, and Narendra Ahuja
	IEEE Conference on Computer Vision and Pattern Recognition, 2016 ⓘ paper ⓘ project
CVPR 2016	**A Comparative Study for Single-Image Blind Deblurring**.
	Wei-Sheng Lai Jia-Bin Huang, Zhe Hu, Narendra Ahuja, and Ming-Hsuan Yang
	IEEE Conference on Computer Vision and Pattern Recognition, 2016 ⓘ paper ⓘ project
	Spotlight Presentation
CVPR 2016	**Weakly Supervised Object Localization with Progressive Domain Adaptation**.
	Dong Li, Jia-Bin Huang, Yali Li, Shengjin Wang, and Ming-Hsuan Yang
	IEEE Conference on Computer Vision and Pattern Recognition, 2016 ⓘ paper ⓘ project
ICCV 2015	**Hierarchical Convolutional Features for Visual Tracking**.
	Chao Ma, Jia-Bin Huang, Xiaokang Yang, and Ming-Hsuan Yang,
	IEEE International Conference on Computer Vision, 2015 ⓘ paper ⓘ project
CVPR 2015	**Single Image Super-Resolution from Transformed Self-Exemplars**.
	Jia-Bin Huang, Abhishek Singh, and Narendra Ahuja,
	IEEE Conference on Computer Vision and Pattern Recognition, 2015 ⓘ paper ⓘ project
	Oral Presentation (acceptance rate $< 3\%$)
ETRA 2014	**Towards Accurate and Robust Cross-Ratio based Gaze Trackers Through Learning From Simulation**.
	Jia-Bin Huang, Qin Cai, Zicheng Liu, Narendra Ahuja, and Zhengyou Zhang
	ACM Symposium on Eye Tracking Research & Applications, (**ETRA**), 2014
	Oral Presentation ⓘ paper ⓘ project
	US Pattern US20150278599
	ETRA 2014 Best Long Paper Award
ICCP 2013	**Transformation Guided Image Completion**.
	Jia-Bin Huang, Johannes Kopf, Narendra Ahuja, and Sing Bing Kang
	IEEE Conference on International Conference on Computational Photography (**ICCP**), 2013
	Oral Presentation ⓘ paper ⓘ project
ICPR 2012	**Saliency Detection via Divergence Analysis: A Unified Perspective**.
	Jia-Bin Huang and Narendra Ahuja
	International Conference on Pattern Recognition (**ICPR**), 2012
	Oral Presentation ⓘ paper ⓘ project
	ICPR 2012 Best Student Paper Award (Computer Vision and Robot Vision Track)
ACCV 2010	**Exploiting Self-Similarities for Single Frame Super-Resolution** .
	Chih-Yuan Yang, Jia-Bin Huang, and Ming-Hsuan Yang
	Asian Conference on Computer Vision, 2010 ⓘ paper ⓘ project
ICIP 2010	**Single Image Deblurring with Adaptive Dictionary Learning**.
	Zhe Hu, Jia-Bin Huang, and Ming-Hsuan Yang
	IEEE International Conference on Image Processing, 2010 ⓘ paper ⓘ project
CVPR 2010	**Fast Sparse Representation with Prototypes**.
	Jia-Bin Huang and Ming-Hsuan Yang
	IEEE Conference on Computer Vision and Pattern Recognition, 2010 ⓘ paper ⓘ project
ACCV 2009	**Estimating Human Pose from Occluded Images**.
	Jia-Bin Huang and Ming-Hsuan Yang
	Asian Conference on Computer Vision, 2009
	Oral Presentation ⓘ paper ⓘ project
CVPR 2009	**Moving Cast Shadow Detection Using Physics-based Features**.
	Jia-Bin Huang and Chu-Song Chen
	IEEE Conference on Computer Vision and Pattern Recognition, 2009 ⓘ paper ⓘ project
ICASSP 2009	**A Physical Approach to Moving Cast Shadow Detection**.
	Jia-Bin Huang and Chu-Song Chen
	IEEE International Conference on Acoustics, Speech and Signal Processing, 2009
	Oral Presentation ⓘ paper
ICASSP 2009	**Image Recolorization For The Colorblind**.
	Jia-Bin Huang, Chu-Song Chen Tzu-Cheng Jen, and Sheng-Jyh Wang
	IEEE International Conference on Acoustics, Speech and Signal Processing, 2009 ⓘ paper

ECCV-W 2008	**Learning Moving Cast Shadows for Foreground Detection**.
	Jia-Bin Huang and Chu-Song Chen
	Eighth International Workshop on Visual Surveillance, 2008 ⓘ paper
ECCV-W 2008	**Enhancing Color Representation for the Color Vision Impaired**.
	Jia-Bin Huang and Chu-Song Chen
	Workshop on Computer Vision Applications for the Visually Impaired, 2008
	Oral Presentation ⓘ paper

Funding

Research Grants

2021-2024 **SCH: Semi-Automated Rehabilitation in the Home**, *Co-PI, National Science Foundation Smart and Connected Health*, Award amount: $1,100,000..

2020-2022 **Learning with Limited Supervision**, *Sole-PI, 3M Non-tenured Faculty Award*, 3M.
Award amount: $45,000.

2020-2021 **Reflection Removal from Structured Light Fields**, *Sole-PI*, Denso Corp.
Award amount: $127,715.

2020-2021 **Reducing Biases in Visual Recognition**, *PI*, 4-VA Collaborative Research.
Award amount: $25,000. (with Vicente Roman at University of Virginia)

2020-2022 **Rapid Predictive Analytical Model Deployment in Vehicles**, *Co-PI*, Ford .
Award amount: $204,851. (with Brian Mayer at Virginia Tech)

2019-2022 **CPS: Medium: Computation-Aware Autonomy for Timely and Resilient Multi-Agent Systems**, *Co-PI, Cyber-Physical System (CPS)*, National Science Foundation.
Award amount: $1,197,661. (with Ryan William, Haibo Zeng, Changhee Jung)

2020-2022 **Sensor Technology Applied to Rehabilitation in Stroke Rehabilitation Strategies**, *Co-PI, Techniques, and Interventions program*, Rehabilitation Engineering Research Centers (RERC).
Award amount: $349,209. (with Thanasis Rikakis, Aisling Kelliher)

2019-2020 **Dancing Plants: Integrating Plant Imaging and Acoustics to Improve Plant Growth**, *Co-PI, ICAT SEAD Grant*, ICAT, Virginia Tech.
Award amount: $ 25,000. (with Bingyu Zhao, Ivica Bukvic, Daniel Pillis)

2019-2021 **Novel View Synthesis and 3D Reconstruction from Structured Inputs**, *Sole-PI*, Denso Corp.
Award amount: $200,000.

2019-2020 **Instance-level Video Object Segmentation in the Wild**, *Co-PI, Global Outreach Award (GRO)*, Samsung.
Award amount: $100,000. (with Alexander Schwing at UIUC)

2018-2019 **Human-centric Activity Understanding with Relational Reasoning**, *Sole-PI, Google Faculty Research Award*, Google.
Award amount: $53,375.

2018-2019 **Instance-level Video Object Segmentation in the Wild**, *Co-PI, Global Outreach Award (GRO)*, Samsung.
Award amount: $98,945. (with Alexander Schwing at UIUC)

2018-2020 **CRII: RI: Representation Learning and Adaptation using Unlabeled Videos**, *Sole-PI, CISE Research Initiation Initiative Award*, National Science Foundation.
Award amount: $172,903.

2017-2018 **Source Form**, *Co-PI, ICAT SEAD Grant* .
Award amount: $ 25,000. (with Sam Blanchard and Christopher B. Williams)

Equipment, Educational, Organizational Grants & Gifts

2020 **Facebook. $10,000**, *Facebook*.

2020 **Adobe. $10,000**, *Adobe*.

2020 **Adobe. $7,000**, *Adobe*.

2020 **Facebook. $10,000**, *Facebook*.

2019	**Facebook. $15,000**, *Facebook*.
2019	**Google Cloud Research Credits Program. $5,000**, *Google AI*.
2018	**Google Cloud Research Credits Program. $5,000**, *Google AI*.
2018	**NVIDIA GPU Grant: Titan Xp**, *NVIDIA Corp.*.
2018	**PFP Cybersecurity. $15,000**, *PFP Cybersecurity* .
2018	**Adobe Research. $10,000**, *Adobe*.
2017	**NVIDIA GPU Grant: Titan Xp**, *NVIDIA Corp.*.
2017	**Faculty mentoring grant. $1,500**, *Office of the Provost, Virginia Tech*.
2016	**NVIDIA GPU Grant: Titan X**, *NVIDIA Corp.*.

Selected Honors and Awards

Oct 2019	**Outstanding Reviewer Award**, *Neural Information Processing System 2019*.
July 2017	**Outstanding Reviewer Award**, *IEEE Computer Vision and Pattern Recognition 2017*.
Dec 2016	**Outstanding Reviewer Award**, *Visual Communications and Image Processing*. ⓘ link
Feb 2016	**Best Talk Award**, *Coordinated Science Laboratory Student Conference*, UIUC. in recognition of high-quality research, professional slides, and elegant eloquence. ⓘ link
May 2015	**Dissertation Completion Fellowship**, *Graduate College*, UIUC. A university-wide fellowship. Full tuition waiver and a one-year stipend. ⓘ link
May 2015	**Cognitive Science / Artificial Intelligence Award**, *Beckman Institute*, UIUC. Award for supporting and encouraging students with interdisciplinary interest in CS/AI. ⓘ link
April 2015	**Thomas and Margaret Huang Award for Graduate Research**, *Beckman Institute*, UIUC. Research award for supporting graduate students in Human-Computer Intelligent Interaction ⓘ link
April 2015	**First place**, *Team Space Design Competition*, NASA Jet Propulsion Laboratory. A university-wide competition host by NASA JPL ⓘ certificate
March 2015	**Conference Travel Award**, *Graduate College*, UIUC. Travel grant for attending IEEE Conference on Computer Vision and Pattern Recognition ⓘ link
July 2014	**MOE Technologies Incubation Scholarship**, *Ministry of Education*, Taiwan. Annual scholarship 42,000 USD for three years ⓘ certificate
March 2014	**Best Long Paper Award**, *ACM Symposium on Eye Tracking Research*, ETRA 2014. For our work on learning-based eye tracking ⓘ certificate
March 2014	**Sundaram Seshu International Student Fellowship** , *ECE*, UIUC. UIUC ECE departmental fellowship ⓘ certificate
Dec 2014	**PURE Best Project Award x3**, *Promoting Undergraduate Research in Engineering*, UIUC. Michael Qiu (Fall 2014), Zelun Luo, Anarghya Mitra (Spring 2013), and Sakshi Srivastava (Fall 2012)
Dec 2012	**Best Mentor of the Semester**, *Promoting Undergraduate Research in Engineering*, UIUC.
Nov 2012	**Best Student Paper Award**, *International Conference on Pattern Recognition*, ICPR 2012. For our work "Saliency Detection via Divergence Analysis: A unified perspective." ⓘ link
May 2010	**Government Scholarship for Studying Abroad**, *Ministry of Education*, Taiwan. One of nine selected EECS people with excellent academic performance
Aug 2008	**Best Paper Award Runner Up**, *Computer Vision, Graphics, and Image Processing*, 2008.
Aug 2006	**Best Paper Award Runner Up**, *Computer Vision, Graphics, and Image Processing*, 2006.

Advising Activity

Current Graduate Advises

Fall 2016 -	**Jinwoo Choi**, *Ph.D. student*, Virginia Tech, Bindi Prasad Scholarship .
Fall 2017 -	**Yuliang Zou**, *Ph.D. student*, Virginia Tech.
Fall 2018 -	**Badour AlBahar**, *Ph.D. student*, Virginia Tech, Kuwait University Scholarship.

Fall 2018 - **Chen Gao**, *Ph.D. student*, Virginia Tech.

Fall 2019 - **Esther Robb**, *M.S. student*, Virginia Tech, Bradley Research Fellowships.

Fall 2020 - **Lowell Weissman**, *M.S. student*, Virginia Tech.

Former MS/BS Students

2018 - 2020 **Shih-Yang Su**, *M.S. student*, Virginia Tech.
  - Thesis: Learning to handle occlusion for motion analysis and view synthesis
  - Next position: PhD student at The University of British Columbia (Advisor: Helge Rhodin)

2018 - 2020 **Joseph Messou**, *M.S. student*, Virginia Tech, New Horizon Graduate Scholarship.
  - Thesis: Handling Invalid Pixels in Convolutional Neural Networks
  - Next position: PhD student at The University of Maryland

2017 - 2019 **Subhashree Radhakrishnan**, *M.S. student*, Virginia Tech.
  - Next position: Deep Learning Engineer at NVIDIA

2016 - 2018 **Po-Han Huang**, *ECE, UIUC*.
  - MS Thesis: DeepMVS: Learning Multi-View Stereopsis
  - Next position: Deep Learning Engineer at NVIDIA

2016 - 2018 **Adithya Reddy**, *ECE, Virginia Tech*.
  - Next position: Software engineer at Qualcomm

Fall 2014 **Michael Qiu**, *CE, UIUC*.
  - Project: Enhancing Portrait Photographs Best PURE project award

Fall 2013 **Le Wang**, *ECE, UIUC*.
  - Project: Video-based Physiology Signal Monitoring Third Place, The Image of Research
  - Next position: MS student at Stanford University

Spring 2013 **Zelun Luo**, *ECE, UIUC*.
  - Project: Video-based identity and expression recognition (with Anarghya Mitra) Best PURE project award
  - Next position: PhD student at Stanford University (Advisor: Fei-Fei Li)

Spring 2013 **Anarghya Mitra**, *ECE, UIUC*.
  - Project: Video-based identity and expression recognition (with Zelun Luo) Best PURE project award
  - Next position: Software engineer at Google

Fall 2012 **JunYoung Gwak**, *CS, UIUC*.
  - Project: Pose-aware online visual tracking ⓘ poster Jeffrey P. Blahut Memorial Scholarship
  - Next position: PhD student at Stanford University (Advisor: Silvio Savarese)

Fall 2012 **Linjia Chang**, *ECE, UIUC*.
  - Project: Image smoothing for structure extraction ⓘ poster
  - Next position: Firmware engineer at Intel Corporation

Fall 2012 **Sakshi Srivastava**, *ECE, UIUC*.
  - Project: Face expression enhancement ⓘ poster Best PURE project award
  - Next position: PhD student at University of Illinois, Urbana-Champaign

Spring 2012 **Kevin Han**, *ECE, UIUC*.
  - Project: Static and dynamic hand gesture recognition ⓘ poster ⓘ demo ⓘ code
  - Next position: PhD student at UC Berkeley

Spring 2012 **Danyang (Mike) Wang**, *ECE, UIUC*.
  - Project: Real-time face detection, tracking and attribute recognition ⓘ poster
  - Next position: Master student at University of Illinois, Urbana-Champaign

Former Visiting Students

Spring 2019 **Yun-Chun Chen**, *B.S. student*, National Taiwan University.
  - Now PhD student at University of Toronto (Advisor: Animesh Garg)

Spring 2019 **Meng-Li Shih**, *B.S. student*, National Tsing Hua University.

Spring 2019 **Jin-Dong Dong**, *B.S. student*, National Tsing Hua University.
  - Now PhD student at CMU

Summer 2018 **Wei-Yu Chen**, *B.S. student*, National Taiwan University.
  - Now PhD student at CMU

Summer 2017	**Yen-Chen Lin**, *B.S. student*, National Tsing Hua University.
	○ Now PhD student at MIT (Advisor: Phillip Isola and Alberto Rodriguez)
Summer 2017	**Hao-Wei Yeh**, *Ph.D. student*, University of Tokyo.
	○ Now PhD student at University of Tokyo
Summer 2017	**Chen Gao**, *M.S. student*, University of Michigan, Ann Arbor.
	○ Now PhD student at Virginia Tech (Advisor: Jia-Bin Huang)

Teaching Experiences

Fall 2020	**ECE/CS 6524 Deep Learning**.
Spring 2020	**ECE 5424/CS 5824 Machine Learning**.
Fall 2019	**ECE/CS 6524 Deep Learning**.
Spring 2019	**ECE 5424/CS 5824 Advanced Machine Learning**.
Fall 2018	**ECE 5554/4554 Computer Vision**.
Spring 2018	**ECE 1754 Introduction to Programming**.
Fall 2017	**ECE 5554/4554 Computer Vision**.
Spring 2017	**ECE 6554 Advanced Computer Vision**.
Fall 2016	**ECE 5554/4554 Computer Vision**.
Fall 2015	**Guest Lecture, CS 445 Computational Photography**, *Computer Science, University of Illinois, Urbana-Champaign*.
	○ Linear Algebra and MATLAB Tutorial ⓘ slide
Spring 2015	**Teaching Assistant of ECE 549/CS 543 Computer Vision with Prof. Derek Hoiem**, *Computer Science, University of Illinois, Urbana-Champaign*.
	○ Designed and developed 4 new homework problems. ⓘ course website
	○ Created a curated list of computer vision resources. ⓘ Awesome Computer Vision
	○ Covered two lectures and one MATLAB tutorial:
	1. Image features and categorization ⓘ slide
	2. Convolutional neural networks ⓘ slide
	3. Writing fast MATLAB code ⓘ slide

Academic Services

Journal Reviewer	International Journal of Computer Vision (**IJCV**)
	ACM Computing Surveys (**CSUR**)
	IEEE Pattern Analysis and Machine Intelligence (**TPAMI**)
	IEEE Transactions on Image Processing (**TIP**)
	IEEE Transactions on Visualization and Computer Graphics (**TVCG**)
	Computer Vision and Image Understanding (**CVIU**)
	IEEE Transactions on Circuits and Systems for Video Technology (**CSVT**)
	IEEE Transactions on Multimedia (**TMM**)
	The Visual Computer (**TVC**)
	ACM Transactions on Intelligent Systems and Technology (**ACM TIST**)
	Image and Vision Computing Journal (**IVC**)
	Journal of Selected Topics in Signal Processing (**JSTSP**)

Conference Reviewers	IEEE Conference on Computer Vision (**ICCV** 2015, 2017) IEEE Conference on Computer Vision and Pattern Recognition (**CVPR** 2015 – 2018) European Conference on Computer Vision (**ECCV** 2016, 2018) British Machine Vision Conference (**BMVC** 2017 – 2018) SIGGRAPH Asia (**SigAsia** 2014 –) Eurographics (**EG** 2014 – 2015) IEEE Conference on Computational Photography (**ICCP** 2015) Neural Information Processing Systems (**NeurIPS** 2015, 2018, 2019) Asian Conference on Computer Vision (**ACCV** 2014) Winter Conference on Computer Vision (**WACV** 2014 – 2017) International Conference on Multimedia & Expo (**ICME** 2015) Visual Communication and Image Processing (**VCIP** 2012 – 2016) Conference on Graphics, Patterns and Images (**SIBGRAPI** 2014 – 2015) Pacific Graphics 2014 (**PG** 2014 – 2015) International Conference on Acoustics, Speech, and Signal Processing (**ICASSP** 2014 – 2016) Eye Tracking and Research Applications (**ETRA** 2014, 2016)
Area Chair	International Conference on Computer Vision (ICCV 2021) Association for the Advancement of Artificial Intelligence (AAAI 2021) International Conference on Computer Vision (ICCV 2019) IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2019) British Conference on Machine Vision (BMVC 2019) Winter Conference on Computer Vision (MVA 2018) IAPR International Conference on Machine Vision Applications (MVA 2016)
Research Mentor	Research Mentor for UIUC Promoting Undergrad Research in Engineering (P.U.R.E.) program, Spring 2012, Fall 2012 (**Best Mentor of the semester**), Spring 2013, and Fall 2014. ⓘ link
Professional Societies	IEEE member ACM member ACM SIGGRAPH member
Webmaster	Computer Vision Taiwanese Group (more than 5,000 members) ⓘ link Awesome Computer Vision ⓘ link Computer Vision Genealogy ⓘ link

References

M.S./Ph.D. Advisor	**Narendra Ahuja**, *Donald Biggar Willet Professor in Department of Electrical and Computer Engineering*, University of Illinois, Urbana-Champaign. ✉ n-ahuja@illinois.edu ⓘ homepage
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Research Mentor	**Johannes Kopf**, *Research Scientist Manager*, Facebook. ✉ jkopf@fb.com ⓘ homepage
Research Mentor	**Richard Szeliski**, *Research Scientis*, Facebook. ✉ szeliski@fb.com ⓘ homepage
Thesis Committee	**Derek Hoiem**, *Associate Professor in Department of Computer Science*, University of Illinois, Urbana-Champaign. ✉ dhoiem@uiuc.edu ⓘ homepage