Xide Xia

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EDUCATION

Boston University — Boston, MA
Ph.D. candidate in Computer Science — 2016 – 2020 (expected)
- Advisor: Professor Brian Kulis

Harvard University — Cambridge, MA
M.E. in Computational Science and Engineering — 2014 – 2016

Brown University — Providence, RI
M.S. in Electrical Science — 2012 – 2013

Beijing Institute of Technology — Beijing, China
B.S. in Electrical and Information Engineering — 2008 – 2012

RESEARCH INTERESTS

- **Image/Video Computing**: image/video style transfer, domain adaptation, and segmentation.
- **Embedding Models**: data retrieval, deep metric learning for ranking, and attribute-based models.

RESEARCH & INDUSTRY EXPERIENCE

- **BU Image and Video Computing (IVC) Lab** — Boston, MA
  Research Assistant — Sept 2016 – present
  - Attribute-based deep metric learning for fashion retrieval.
  - Deep metric learning for ranking.
  - Fully-unsupervised image segmentation and learning the underlying lower-dimensional representation.
  - Multi-domain transfer learning and adaptation.
  - Image/video content creation.

- **Google AI Research** — Mountain View, CA
  Research Intern/Student Researcher — May 2019 – May 2020
  - Joint bilateral learning for photorealistic style transfer.
  - Designed and implemented an image stylization model that runs in real-time at 4K on a mobile phone.
  - Real-time localized video style transfer.
  - Graphic design stylization.

- **Google** — Mountain View, CA
  SWE-PhD Intern at Street-Smart team — May 2018 – Aug 2018
  - Designed and implemented a deep attribute-based embedding model for traffic sign data.
  - Improved the F1 score of unseen traffic sign detection by 18%.

- **Legendary Applied Analytics** — Boston, MA
  Research Intern — Sept 2017 – May 2018
  - Designed and implemented a deep Convolutional Neural Network for spatial-temporal representation learning.
  - Designed a model to predict viewer counts and like/dislike ratio prediction for trailer movies.

- **Harvard University** — Cambridge, MA
  Research Assistant — Feb 2015 – June 2016
  - Designed a Recurrent Neural Network (RNN) model for intervention and outcome predictions in ICU
  - Simulated multidimensional physiological time series of patients during vasopressor administration.
  - *M.E.* Thesis: Cost-Sensitive Batch Mode Active learning and Its Application to Astronomy.

• **Harvard Medical School** Boston, MA
Research Fellow in the Laboratory of Systems Pharmacology (LSP) Aug 2013 – June 2016

- Developed a new computational method for predicting protein-DNA interactions based on sequences information.
- Developed a Protein-DNA Structure-Affinity Database in which the experimental and quantitative DNA binding affinities of helix-turn-helix proteins were mapped onto the structures of the corresponding protein-DNA complexes.

PUBLICATION

[P.8] **Xide Xia**, Tianfan Xue, Wei-shang Lai, Zheng Sun, Abby Chang, Brian Kulis, Jiawen Chen. "Real-time Localized Photorealistic Video Style Transfer." Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (**WACV**), 2021.

[P.7] Ali Siahkamari, **Xide Xia**, Venkatesh Saligrama, David Castañón, Brian Kulis. "Learning to Approximate a Bregman Divergence." Advances in Neural Information Processing Systems (**NeurIPS**), 2020.

[P.6] **Xide Xia**, Meng Zhang, Tianfan Xue, Zheng Sun, Hui Fang, Brian Kulis, Jiawen Chen. "Joint Bilateral Learning for Real-time Universal Photorealistic Style Transfer." The European Conference on Computer Vision (**ECCV**), 2020.

[P.5] Xingchao Peng, Qinxun Bai, **Xide Xia,** Zijun Huang, Kate Saenko, Bo Wang. "Moment Matching for Multi-Source Domain Adaptation." In Proc. IEEE International Conference on Computer Vision (**ICCV**) 2019, Oral.

[P.4] Kun He, Fatih Cakir, **Xide Xia,** Brian Kulis, Stan Sclaroff. "Deep Metric Learning to Rank." In Proc. IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**) 2019.

[P.3] **Xide Xia,** Xingchao Peng, Brian Kulis. "W-Net: A Deep Model for Fully Unsupervised Image Segmentation." ArXiv tech report 1711.08506.

[P.2] **Xide Xia,** Finale Doshi-Velez, Pavlos Protopapas. "Cost-Sensitive Batch Mode Active learning: Designing Astronomical Observation by Optimizing Telescope Time and Telescope Choice." In Proceedings of SIAM Data Mining (**SDM**) 2016.

[P.1] Mohammed AlQuraishi, Shengdong Tang, **Xide Xia.** "An affinity-structure database of helix-turn-helix: DNA complexes with a universal coordinate system." **BMC Bioinformatics**, 16(1), 390. PMID:26586237.

HONORS & AWARDS

[A.8] Outstanding Reviewer Award, CVPR 2020
[A.7] Research Fellowship (2016-Present, Boston University)
[A.6] CRA-Women Graduate Cohort Workshop Student Travel Award 2017
[A.5] Dean's Fellow Scholarship - awarded to two students each year (2016-2017, Boston University)
[A.4] Harvard IACS Scholarship - awarded to one student each year (2015-2016, Harvard University)
[A.3] SDM Student Travel Award 2016
[A.2] Research Fellowship (2013-2016, Harvard Medical School)
[A.1] Ren-Min Scholarship (2008-2012, Beijing Institute of Technology)

TECHNICAL STRENGTHS

• **Programming Languages**: Python, C/C++, Java, Matlab, and R.
• **Deep Learning Libraries**: Tensorflow, PyTorch, MatConvNet, Keras, and Caffe.

TEACHING

• CS591 Deep Learning, Boston University Fall 2018, Fall 2020
• CS131 Combinatoric Structures, Boston University Fall 2016
• AM207 Stochastic Methods for Data Analysis, Inference, and Optimization, Harvard University Spring 2016

PROFESSIONAL SERVICES

Reviewers for CVPR, ICCV, ECCV, ACMMM, AAAI, BMVC, WACV, and NIPS.