Davis Wertheimer

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SUMMARY

I am a machine learning researcher with a proven track record of creative solutions to difficult challenges in deep learning. I have multiple top-tier conference publications and my work with my graduate advisor Bharath Hariharan has advanced and broadened the state-of-the-art in learning from limited data. I am seeking an industry research scientist position at the intersection of pure and applied research, tackling challenging problems in Machine Learning and Computer Vision.

EDUCATION

- **Cornell University:** Ph.D. in Computer Science *Expected December 2021*
  Concentration Artificial Intelligence, with dual minors in Information Science and Scientific Computing. Coursework includes advanced graduate-level algorithms, systems, programming languages, natural language processing, deep learning, computer vision, design, and technology ethics, law and policy. My research work is detailed in Publications, below.
- **Stanford University:** BSci in Symbolic Systems *June 2016*
  Concentration Artificial Intelligence, with a minor in mathematics. Graduated with distinction (3.9 GPA). Coursework included Stanford's advanced Math 50 series, programming series (Java, C++, C, and Python), and studies in probability theory, linear algebra, formal logic, algorithms, linguistics, psychology, natural language processing, deep learning, and computer vision.

PUBLICATIONS

- **Few-Shot Learning in Long-Tailed Settings** *TPAMI special issue, under review*
  Davis Wertheimer, Luming Tang, Dhruv Baijal*, Pranjal Mittal*, Anika Talwar* and Bharath Hariharan (* equal contribution)
  An update and expansion of my CVPR 2019 paper for journal publication.
- **Few-Shot Classification with Feature Map Reconstruction Networks** *CVPR 2021*
  Davis Wertheimer*, Luming Tang* and Bharath Hariharan (*equal contribution)
  Use spatial detail and closed-form linear regression in latent space to better leverage limited data at test-time.
- **Augmentation-Interpolative AutoEncoders for Unsupervised Few-Shot Image Generation**
  Davis Wertheimer, Omid Poursaeed and Bharath Hariharan
  Mapping data augmentations to latent space allows image generators to produce images from novel concepts.
- **Revisiting Pose-Normalization for Fine-Grained Few-Shot Recognition** *CVPR 2020*
  Luming Tang, **Davis Wertheimer** and Bharath Hariharan
  Keypoint annotations yield fine-grained classifiers that learn novel, unannotated concepts.
- **Few-Shot Learning with Localization in Realistic Settings** *CVPR 2019, **oral***
  Davis Wertheimer and Bharath Hariharan
  Lightweight techniques *double* the accuracy of novel concept learners on difficult, skewed class distributions.

WORK EXPERIENCE

- **Research Assistant, Cornell Graphics and Vision Group** *September 2017 – present*
  Conducting advanced research in Computer Vision and Machine Learning, and writing and producing research articles for publication in top-tier conference and journal venues.
- **Teaching Assistant, Cornell Department of Computer Science** *September 2016 – September 2017*
  Helped conduct coursework for both high-level and introductory computer science classes.
- **Research Assistant, Stanford Computation and Cognition Lab** *November 2014 – June 2015*
  Produced linguistic/psychological experiment modules and performed data analysis.
- **Advisory Software Engineer, IBM Corporation** *July 2014 – September 2014*
  Worked on development of IBM's ITA/CTA Experimentation Facility, an online network-science-experiment hosting and sharing service.
- **Research Assistant, Bill Lane Center for the American West** *October 2013 – June 2014*
  Researched and produced interactive online and museum displays for Stanford's Bill Lane Center, in collaboration with the Cantor Art Museum.

HONORS, AWARDS, AND MEMBERSHIPS

- **ICCV 2021 Outstanding Reviewer** *2021*
  Nomination for services as a volunteer anonymous peer-reviewer (top 5%)
- **ICML 2021 Best Reviewer** *2021*
  Nomination for services as a volunteer anonymous peer-reviewer (top 10%)
- **CVPR 2021 Outstanding Reviewer** *2021*
  Nomination for services as a volunteer anonymous peer-reviewer
- **Phi Beta Kappa** *2016*
  Invited membership based on coursework performance in science and arts
- **Intel Science Talent Search Semifinalist** *2012*
  I qualified as one of 300 semifinalists nationwide, for my scientific study *"Implicit Processes in Conscious Problem-Solving"*
- **Horace Greeley High School Class of 2012 Salutatorian** *2012*
  Second highest grade-point average from a graduating class of over 300 students
- **Scholastic Art and Writing National Gold Key** *2011*
  I won the highest national award for one of my fractal digital art pieces

SKILLS AND STRENGTHS

- **Coding Languages**
  Python, Java, C++, C, working familiarity with MATLAB, JavaScript, Julia and R
- **Deep Learning Frameworks**
  PyTorch, SciPy, NumPy
- **Abstract Reasoning**
  High-level conceptual understanding, creative problem-solving, literature search
- **Presentation Skills**
  Technical and non-technical writing, oral presentation, LaTeX, image processing, video production, HTML