Hadi Kiapour

CONTACT INFORMATION

2479 E Bayshore Rd
Palo Alto, CA 94303
hadi@cs.unc.edu

www.hadikiapour.com
Google Scholar
LinkedIn

ABOUT

A technical leader with strong background in AI, particularly computer vision and deep learning. I lead the computer vision group at Dawnlight (founded and advised by Fei-Fei Li), working on the next generation of ambient intelligence using machine learning. We build video based human activity and object recognition systems for real-time processing on edge computers. Previously I was a researcher at eBay, where I developed deep learning models for large scale product recognition and visual search. I am passionate about fundamental and applied research, building and growing diverse teams to bridge the gap between academia and industry and delivering scalable AI solutions that reach the public.

EDUCATION

University of North Carolina at Chapel Hill — Dec. 2015
Doctor of Philosophy in Computer Science
Dissertation: Large Scale Visual Recognition of Clothing, People and Styles
Advisor: Tamara L. Berg

Sharif University of Technology — Jun. 2011
B.Sc. in Electrical Engineering, Control Systems

PROFESSIONAL EXPERIENCE

Dawnlight, Palo Alto, CA
Head of Computer Vision — Oct 2020 - Present

⬦ Delivered end-to-end deep learning solution for human action recognition on edge devices for patient monitoring and fall prevention
⬦ Submitted the first fully AI-based inpatient monitoring device to FDA with F-score 0.95+
⬦ Managed team of 8 applied scientists and engineers, recruited world-class talents
⬦ Oversaw data collection and annotation team of 30, developed instructions from scratch, monitored performance and optimized operational workflows
⬦ Partnered with product and tech departments including hardware, firmware and infra to define, track and execute long-term roadmaps
⬦ Collaborated with regulatory and business team to drive tech development with key partners
⬦ Spearheaded academic collaborations with MIT Han Lab, mentored student researchers

Research Scientist — May 2019 - Oct 2020

⬦ Designed and implemented privacy-preserving activity recognition algorithms, patented
⬦ Delivered efficient video recognition models on multi modal streams of RGB, Depth and IR
⬦ Trained and shipped real-time 2D, 3D pose estimation models on edge devices
⬦ Developed face and hand tracking for Covid-19 prevention app, Stanford StartX initiative
⬦ Spearheded investor and customer demos internationally, from initial planning to completion under challenging time and budget constraints
⬦ Pioneered the design and implementation of the initial platform for automated data ingestion and model performance evaluation, a cross-team collaboration. Processed 2M event records from 30+ edge devices, later managed ownership transfer to engineering team
⬦ Collaborated with firmware team to build company's first cross-compiled image for running vision models on Nvidia Jetson family, reducing the set up from two hours to few minutes

CoreAI Computer Vision, eBay, San Francisco, California.
Research Scientist/Tech Lead   2016 - 2019

◇ Large scale fine-grained image classification and matching for visual search at eBay
◇ Object detection and recognition for Shop the Look on images from the web
◇ Key contributor of visual search in production for eBay ShopBot and Close5
◇ Built real-time personalized banner image generation using vision and machine learning
◇ Deployed and maintained deep learning services on Google Cloud and AWS
◇ Contributed to eBay GPU Cluster, mentored engineers to train deep models for production
◇ Partnered with product and drove inline shopping experience with Facebook Messenger team
◇ Mentored research interns and published in object detection, multi-modal learning, semi-supervised attribute classification, active image search with RL, and GANs

Computer Science Department, University of North Carolina at Chapel Hill
Research Assistant   2013 - 2015
Research topics: object detection and segmentation, visual recognition of fashion styles, large scale image retrieval.
Advisors: Prof. Tamara Berg, Prof. Alex Berg and Prof. Svetlana Lazebnik

Computer Science Department, Stony Brook University (SUNY), New York
Research Assistant   2011 - 2013
Research topic: large scale semantic segmentation of clothing images on the web
Advisors: Prof. Tamara Berg, Prof. Luis Ortiz

eBay Research Labs, San Jose, California.
Research Intern   Summer 2015
Research topic: multi-modal image and text joint data embeddings with skip-grams
Advisors: Hassan Sawaf , Robinson Piramuthu

eBay Research Labs, San Jose, California.
Research Intern   Summer 2014
Research topic: fine-grained object classification using mid-level representation learning

Royal Institute of Technology (KTH), Stockholm, Sweden.
Visiting Researcher at Computer Vision and Active Perception Lab   2010
Research topic: 3D modeling from 2D indoor scene images
Advisors: Prof. Stefan Carlsson, Prof. Jan-Olof Eklundh

Institute for Research in Fundamental Sciences (IPM), Tehran, Iran.
Researcher   2009 - 2011
Research topic: object detection in indoor scenes
Advisors: Prof. Ali Farhadi and Prof. Mehrdad Shahshahani

Digital Signal Processing Lab, Sharif University of Technology, Tehran, Iran.
Student Researcher   2009 - 2010
Research topic: facial action recognition using hidden markov models and neural networks.
Advisor: Prof. M. T. Manzuri

PUBLICATIONS   Day-night Consistent Attention for Daily Living Action Recognition
M. Li, H. Kiapour, J. Lin, S. Han
Under review, 2021

Give me a hint! Navigating Image Databases using Human-in-the-loop Feedback
B. A. Plummer, H. Kiapour, S. Zheng, R. Piramuthu
IEEE Winter Confernece on Applications of Computer Vision, WACV 2019

Every Brand is a Story: Going beyond Logos in Fashion Brands by Visual Understanding
H. Kiapour, R. Piramuthu
Computer Vision for Fashion, Art and Design Workshop, ECCV 2018

Conditional Image-Text Embedding Networks
B. A. Plummer, P. Kordas, H. Kiapour, S. Zheng, R. Piramuthu, S. Lazebnik
European Conference on Computer Vision, ECCV 2018

ModaNet: A Large-Scale Street Fashion Dataset with Polygon Annotations (Oral)
S. Zheng, F. Yang, H. Kiapour, R. Piramuthu
ACM Multimedia Conference, ACM MM 2018

Visual Search at eBay
F. Yang, A. Kale, Y. Bubnov, L. Stein, Q. Wang, H. Kiapour, R. Piramuthu
ACM SIGKDD Conference on Knowledge Discovery and Data Mining, KDD 2017

Where to Buy It: Matching Street Clothing Photos to Online Shops (Oral)
H. Kiapour, X. Han, S. Lazebnik, A. C. Berg, T. L. Berg
IEEE International Conference on Computer Vision, ICCV 2015

Mine the Fine: Fine-Grained Fragment Discovery
H. Kiapour, W. Di, V. Jagadeesh, R. Piramuthu
IEEE International Conference on Image Processing, ICIP 2015

Hipster Wars: Discovering Elements of Fashion Styles
H. Kiapour, K. Yamaguchi, A. C. Berg, T. L. Berg
European Conference on Computer Vision, ECCV 2014

Materials Discovery: Fine-Grained Classification
H. Kiapour, K. Yager, A. C. Berg, T. L. Berg
IEEE Winter Conference on Applications of Computer Vision, WACV 2014

Retrieving Similar Styles to Parse Clothing
K. Yamaguchi, H. Kiapour, L. E. Ortiz, T. L. Berg
IEEE Transactions on Pattern Analysis and Machine Intelligence, TPAMI 2014

Paper Doll Parsing: Retrieving Similar Styles to Parse Clothing Items
K. Yamaguchi, H. Kiapour, T. L. Berg
IEEE International Conference on Computer Vision, ICCV 2013

Parsing Clothing in Fashion Photographs
K. Yamaguchi, H. Kiapour, L. E. Ortiz, T. L. Berg
International Conference on Computer Vision and Pattern Recognition, CVPR 2012

Analysis, Interpretation, and Recognition of Facial Action Units and Expressions Using Neuro-Fuzzy Modeling
M. Khademi, H. Kiapour, M. Manzuri, A. Kiaei
Artificial Neural Networks in Pattern Recognition, ANNPR 2010

Recognizing Combinations of Facial Action Units with Different Intensity Using a Mixture of Hidden Markov Models and Neural Networks
M. Khademi, M. Manzuri, H. Kiapour, A. Kiaei, Multiple Classifier Systems, MCS 2010

PATENTS		
Privacy-Preserving Activity Monitoring Systems And Methods		2021
Activity Monitoring Systems And Methods		2020
Determining an Item that has Confirmed Characteristics		2018
Computer Vision and User Segment, and Missing Item Determination		2018
Computer Vision for Unsuccessful Queries and Iterative Search		2018

Computer Vision and Image Characteristic Search	2018
Generating Personalized Banner Image Using Machine Learning	2018
Generating a Digital Image Using a Generative Adversarial Network	2018
Camera Platform and Object Inventory Control	2018
Fine-Grained Categorization	2017
Camera Platform Incorporating Schedule and Stature	2017
Computer Vision	2017
Anchored Search	2017
Projecting Visual Aspects into a Vector Space	2017
Crowd Assisted Query System	2017
Image Analysis and Prediction Based Visual Search	2017
Personal Assistant with Offline Visual Search Database	2017
Personal Assistant with Visual Multi-turn Dialog	2017
Visual Aspect Localization Presentation	2017
Crowd Assisted Query System	2016
Intelligent Online Personal Assistant with Multi-turn Dialog based on Visual Search	2016
Parallel Prediction of Multiple Image Aspects	2016
Intelligent Online Personal Assistant with Offline Visual Search Database	2016

HIGHLIGHTED IN PRESS

⋄ Stanford StartX Med COVID-19 Task Force Participants	2020
⋄ Company presented among Nvidia Edge AI Ecosystem Partners	2020
⋄ Interactive Visual Search	2019
⋄ Beyond Logos: How We're Training eBay's AI to Understand Brands	2018
⋄ Seven Tips for Visual Search at Scale	2018
⋄ ModaNet: A Large-scale Street Fashion Dataset with Polygon Annotations	2018
⋄ How Ebay uses employee pet projects to launch into new initiatives like AR & VR	2018
⋄ This eBay ShopBot knows what you like and feeds you trendy suggestions	2017
eBay ShopBot in Pictureland	2016
⋄ eBay teams up with Facebook Messenger to launch shopping bot	2016
⋄ The new ShopBot bot on Messenger searches eBay for you	2016
⋄ Ebay's New Shopbot On Facebook Messenger Aids Contextual Search	2016

PROFESSIONAL SERVICES

Program Committee/Reviewer

⋄ IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
⋄ International Conference on Computer Vision (ICCV)
⋄ European Conference on Computer Vision (ECCV)
⋄ Asian Conference on Computer Vision (ACCV)
⋄ British Machine Vision Conference (BMVC)
⋄ Winter Conference on Applications of Computer Vision (WACV)
⋄ Workshop on Computer Vision for Fashion, Art, and
⋄ Design (CVFAD)
⋄ ACM SIGGRAPH (Computer GRAPHics and Interactive Techniques)
⋄ International Joint Conference on Artificial Intelligence (IJCAI) (IJCAI-21)

Journal Reviewer

⋄ IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
⋄ ACM Transactions on Multimedia Computing Communications and Applications
⋄ Transactions on Image Processing
⋄ IEEE Transactions on Multimedia
⋄ Pattern Recognition Journal
⋄ The Visual Computer Journal

SELECTED AWARDS		
	Our startup won first place in IEEE Low Power Image Recognition Challenge	2019
	Critical Talent Award, awarded to the top 5% employees company wide, eBay	2018
	Honorable Mention Award at International Innovation Expo, eBay.	2017
	Nominated for the Culture Luminary Awards, eBay	2017
	Awarded oral presentation at ICCV 2015, Chile (top 3.3%)	2015
	Best poster award, Graduate Research Conference, Stony Brook University	2012
	Computer science fellowship, Stony Brook University, NY, USA	2011-2012
	Full research scholarship, Royal Institute of Technology (KTH), Stockholm, Sweden	2010
	Ranked 74th out of over $400,000$ participants in Iran's university entrance exam	2006
	Qualified for the 2nd round of national olympiads of mathematics and informatics	2004
	Admitted to national exceptional talents (NODET), top 1% nation wide, Iran	2003

TEACHING EXPERIENCE		
	Teaching Assistant	
	CSE 373: Analysis of Algorithms. Stony Brook University	Spring 2013
	CSE 214: CS II, Data Structures Using Java. Stony Brook University	Spring 2012
	CSE 102: Intro. to Web Design and Programming. Stony Brook University	Spring 2012
	CSE 220: Systems-Level Programming. Stony Brook University	Fall 2011
	CSE 308: Software Engineering. Stony Brook University	Fall 2011
	Principles of Electrical Engineering. Sharif University of Technology	Fall 2008