

Eric Kim

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OBJECTIVE

I am a full-stack back-end computer vision engineer interested in solving challenging, real-world problems. I have specific expertise in: object detection, visual retrieval, and GPU-accelerated deep neural network (DNN) serving infrastructure.

EDUCATION

University of California, Los Angeles Computer Science, M.S. (2013 – 2016)
Advisors: Professor Demetri Terzopoulos, Dr. M. Alex O. Vasilescu (Tensor Vision Technologies)
Thesis: “A Part-Based, Multiresolution, TensorFaces Approach to Image-Based Facial Verification”
University of California, Berkeley Computer Science, B.A. (2007 – 2011)

KEY SKILLS

Languages: Python, C/C++, Scala, Matlab, Java, Javascript, HTML, CSS, PHP, Scheme, x86.64, MIPS.
Specializations: Computer vision, deep learning, object detection, face recognition, machine learning, medical imaging.
Libraries: Caffe, Caffe2, Tensorflow, pytorch, CUDA/cuDNN, numpy, scipy, OpenCV, Spark

EXPERIENCE

Senior Software Engineer January 2017 – Present
Pinterest, Inc. *Content and Discovery, Visual Search*

As lead of the object detection group, I am the primary owner of the entire detection tech stack. My responsibilities include data collection, model training/evaluation, deployment to production, and serving systems maintenance. Projects include:

Detection improvements. Trained new detection models that led to increases in offline and online engagement metrics.

DNN serving systems optimizations. Improved detection inference throughput by implementing a batch vectorization technique that reduced DNN feature extraction workflow costs by 3-4x.

“Lens your Look”. Implemented and launched a product feature “Lens your Look” that unifies text search with visual search to recommend outfits, and wrote a [blog post](#) describing the technical work.

Mentorship. I have mentored three computer vision PhD interns, and published research papers on our team’s work.

Volunteer Technical Alumni Mentor March 2019 – Present
Hackbright Academy

My duties include: holding office hours, performing mock technical interviews, and providing technical mentorship.

Graduate Researcher, Intern September 2014 – June 2016
University of California, Los Angeles *Department of Computer Science*
Tensor Vision Technologies

Analyzed faces in a multiresolution, part-based multilinear framework, and improved face verification results by 13% on the “Labeled Faces in the Wild” dataset relative to previous multilinear work (79% overall).

Research Programmer January 2016 – December 2016
University of California, Los Angeles *School of Dentistry*

Developed a statistical model of shape and appearance to perform bone contour segmentation of 3D medical imaging data. Quantitatively determined statistically significant facial surgery effects on facial structure. This work led to a publication.

Research Assistant May 2011 – August 2013
University of California, Berkeley *Department of Computer Science*

Led the development of an open-source election auditing software: OpenCount. Utilized computer vision for automatic ballot tallying: image registration, digit recognition, barcode decoding. Successfully performed pilot audits in California counties.

Teaching Assistant May 2010 – June 2016
University of California, Berkeley *Department of Computer Science*
University of California, Los Angeles

Taught undergraduate computer science courses, spanning: Python, Scheme, Java, C/C++, and x86.64. Duties included holding sections, developing course materials, grading, and supervising office hours. [Additional teaching details here.](#)

ADDITIONAL PROJECTS

- **FourVoices:** An automatic music generator. Using principles of music theory, I transformed the music generation problem into a set of constraints and variables, which I solve with a general-purpose constraint satisfaction solver. Hosted on GitHub, the project features a wiki and tutorials on usage. (Python)
- Wrote a popular tutorial on kernel methods as used in machine learning: [“Everything You Wanted to Know about the Kernel Trick \(But Were Too Afraid to Ask\)”](#).

ACADEMIC PAPERS

- “Bootstrapping Complete The Look at Pinterest,” Eileen Li, Eric Kim, Andrew Zhai, Josh Beal, Kunlong Gu. *KDD 2020*.
- “Shop The Look: Building a Large Scale Visual Shopping System at Pinterest,” Raymond Shiau, Hao-Yu Wu, Eric Kim, Yue Li Du, Anqi Guo, Zhiyuan Zhang, Eileen Li, Kunlong Gu, Charles Rosenberg, Andrew Zhai. *KDD 2020*.
- “Complete the Look: Scene-based Complementary Product Recommendation,” Wang-Cheng Kang, Eric Kim, Jure Leskovec, Charles Rosenberg, Julian McAuley. *CVPR 2019*.
- “Three-dimensional soft tissue analysis of the face following micro-implant-supported maxillary skeletal expansion,” Sara Abedini, Islam Elkenawy, Eric Kim, Won Moon. *Progress in Orthodontics*, 2018. (*Accepted, publication pending*)
- “Improved Support for Machine-Assisted Ballot-Level Audits,” Eric Kim, Nicholas Carlini, Andrew Chang, George Yiu, Kai Wang, David Wagner. *EVT/WOTE 2013*, August 2013.
- “Operator-Assisted Tabulation of Optical Scan Ballots,” Kai Wang, Eric Kim, Nicholas Carlini, Ivan Motyashov, Daniel Nguyen, David Wagner. *EVT/WOTE 2012*, August 2012.
- “An Analysis of Write-in Marks on Optical Scan Ballots,” Theron Ji, Eric Kim, Raji Srikantan, Alan Tsai, Arel Cordero, and David Wagner. *EVT/WOTE 2011*, August 2011.