

Lubomir Bourdev

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25+ years of industry experience in computer vision and software engineering. My work made it into Facebook, Photoshop, Acrobat and other products and has been covered by WSJ, MIT Tech Review and others. I am an author of 70+ [issued patents](#) and have 20000+ [citations](#).

Education

Doctor of Philosophy	in Computer Science, U.C. Berkeley.	Advisor: Prof. Jitendra Malik	09/2007 – 05/2011
Master of Science	in Computer Science, Brown University.		09/1994 – 05/1998
Bachelor of Arts	in Computer Science, Brown University.		09/1994 – 05/1998

Industry R&D Experience

[WaveOne, Inc](#) (09/15 - present), Co-Founder and CEO

WaveOne is built on the vision that ML-based codecs will revolutionize the way video is captured, stored, transmitted, represented and analyzed. We have raised investment with top VCs, assembled a team of ML experts and developed state-of-the-art technology for image and video compression. Our technology is published in top ML conferences and we are working with Fortune 500 companies and the US government.

Facebook, (03/12 - 08/15), Research Scientist and Engineering Manager

- Founding member of Facebook AI Research. Responsible for critical early hires. Author of the first FAIR paper.
- Founded and managed the AML Computer Vision team. Started and lead the development of the object/scene recognition technology used at Facebook.

Adobe Systems, [Advanced Technology Labs](#) Sr. Research Scientist (06/98 – 02/12)

- Proposed a novel method for detection of articulated objects using [Poselets](#), together with my Ph.D. advisor Prof. Malik. Our method outperforms all others on the person detection competition of the [PASCAL](#) VOC challenges 2009 and 2010.
- Lead architect of the engine behind the [People Recognition](#) feature in Photoshop Elements 8.0.
- Invented [the Soft Cascade](#) - a face detection method used in Photoshop Elements, Premiere Elements, Premiere Pro.
- Lead author of the [Generic Image Library \(GIL\)](#) – the [Boost](#) image library.
- Designed and developed the [Face Tagging](#) module in Photoshop Elements 4. To my knowledge this was the first consumer-level application of face detection with numerous [reviews](#).
- Designed and developed [Symbolism](#) - a creative tool in Illustrator 9 using my particle system to simplify drawing of complex natural scenes, such as grass, trees, shading, hair, clouds. It has received outstanding [reviews](#).
- Developed the [AGM Flattener](#), a module that converts documents containing semi-transparent graphics into opaque documents. It is used for printing and export across the entire Adobe product line -- Acrobat, Illustrator, InDesign, etc.

Awards, Affiliations, Professional Activities

- Area chair for [CVPR 2016](#), [CVPR 2020](#), [ECCV 2020](#)
- Organizer of the Bay Area Vision Meeting ([BAVM 2013](#)) which brought together 300+ researchers, professors and students at Facebook to discuss the role of deep learning in computer vision.
- Co-organizer of [ICCV13 Tutorial on Part-Based Models for Recognition](#)
- PC Member of [APSI2012](#), [SUNW2012](#), [BigVision2015](#)
- One of two Adobe employees accepted into the University Sabbatical program, which allowed me to pursue a Ph.D. while employed (completed in four years).
- The only student from the Computer Science department in 1998 accepted to the Brown University Combined Program, which allowed me to complete both Bachelor's and Master's degrees in a total of four years.

Selected Publications (see lubomir.org for full list)

- Oren Rippel, Sanjay Nair, Carissa Lew, Steve Branson, Alexander G Anderson and Lubomir Bourdev, [Learned Video Compression](#), ICCV 2019
- Oren Rippel and Lubomir Bourdev, [Real-Time Adaptive Image Compression](#), ICML 2017
- Chen Sun, Manohar Paluri, Ronan Collobert, Ram Nevatia and Lubomir Bourdev, [ProNet: Learning to Propose Object-Specific Boxes for Cascaded Neural Networks](#), CVPR 2016
- Oren Rippel, Manohar Paluri, Piotr Dollar and L Bourdev, [Metric Learning with Density Discrimination](#), ICLR 2016
- Kevin Tang, Manohar Paluri, Li Fei-Fei, Rob Fergus and Lubomir Bourdev, [Improving Image Classification with Location Context](#), ICCV 2015
- Du Tran, Lubomir Bourdev, Rob Fergus, Lorenzo Torresani, Manohar Paluri, [Learning Spatiotemporal Features with 3D Convolutional Networks](#), ICCV 2015
- Ning Zhang, Manohar Paluri, Yaniv Taigman, Rob Fergus and Lubomir Bourdev, [Beyond Frontal Faces: Improving Person Recognition Using Multiple Cues](#), CVPR 2015
- Yunchao Gong, Marcin Pawlowski, Fei Yang, Louis Brandy, Lubomir Bourdev and Rob Fergus, [Web Scale Photo Hash Clustering on a Single Machine](#), CVPR 2015
- Tsung-Yi Lin, Michael Maire, Serge Belongie, Lubomir Bourdev, Ross Girshick, James Hays, Pietro Perona, Deva Ramanan, C. Lawrence Zitnik and Piotr Dollar, [Microsoft COCO: Common Objects in Context](#), Arxiv 2015
- Ning Zhang, Manohar Paluri, Marc’ Aurelio Ranzato, Trevor Darrell and Lubomir Bourdev, [PANDA: Pose Aligned Networks for Deep Attribute Modeling](#), CVPR 2014
- David Bo Chen, Pietro Perona and Lubomir Bourdev, [Hierarchical Cascade of Classifiers for Efficient Poselet Evaluation](#), BMVC 2014
- Georgia Gkioxari, Pablo Arbelaez, Lubomir Bourdev and Jitendra Malik, [Articulated Pose Estimation using Discriminative Armllet Classifiers](#), CVPR 2013
- Vuong Le, Jonathan Brandt, Lubomir Bourdev, Zhe Lin and Thomas Huang, [Interactive Facial Feature Localization](#), ECCV 2012
- Pablo Arbeláez, Bharath Hariharan, Chunhui Gu, Saurabh Gupta, Lubomir Bourdev and Jitendra Malik, [Semantic Segmentation Using Regions and Parts](#), CVPR 2012
- Fei Yang, Lubomir Bourdev, Eli Shechtman, Jue Wang and Dimitri Metaxas, [Facial Expression Editing in Video Using a Temporary-Smooth Factorization](#), CVPR 2012
- Lubomir Bourdev, Subhransu Maji and Jitendra Malik, [Describing People: Poselet-Based Approach to Attribute Classification](#), ICCV 2011
- Bharath Hariharan, Pablo Arbelaez, Lubomir Bourdev, Subhransu Maji and Jitendra Malik, [Semantic Contours From Inverse Detectors](#), ICCV 2011
- Fei Yang, Jue Wang, Eli Shechtman, Lubomir Bourdev and Dimitris Metaxas, [Expression Flow for 3D-Aware Face Component Transfer](#), SIGGRAPH 2011
- Subhransu Maji, Lubomir Bourdev and Jitendra Malik, [Action Recognition From a Distributed Representation of Pose and Appearance](#), CVPR 2011
- Thomas Brox, Lubomir Bourdev, Subhransu Maji and Jitendra Malik, [Object Segmentation by Alignment of Poselet Activations to Image Contours](#), CVPR 2011
- Lubomir Bourdev, Subhransu Maji, Thomas Brox and Jitendra Malik, [Detecting People Using Mutually Consistent Poselet Activations](#), ECCV 2010
- Lubomir Bourdev and Jitendra Malik, [Poselets: Body Part Detectors Trained Using 3D Human Pose Annotations](#), ICCV 2009
- Lubomir Bourdev and Jonathan Brandt, [Robust Object Detection via Soft Cascade](#), CVPR 2005
- Michael Kowalski, Lee Markosian, J.D. Northrup, Lubomir Bourdev, Ronen Barzel, Loring Holden and John Hughes, [Art-Based Rendering of Fur, Grass, and Trees](#), SIGGRAPH 1999 (front cover)
- Lee Markosian, Michael Kowalski, Sam Trychin, Lubomir Bourdev, Daniel Goldstein and John Hughes, [Real-Time Nonphotorealistic Rendering](#), SIGGRAPH 1997