

# TINGBO HOU

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## Summary

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- Leading an Applied Research team, working on Generative AI and Computer Vision.
- Delivered high-impact launches in major Google products, including Photos, YouTube, Workspace, Ads, Search, Cloud, Pixel, Android, etc.
- Received multiple PA/company level impact awards at Google.
- Holds 40+ publications and 30+ patents.

## Experience

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### Google

**March 2019 – Present**

*Senior Staff Software Engineer, Manager*

*Mountain View, CA*

- Text-to-Image Generation: Worked on efficient sampling, distillation, image editing, fine-tuning, reinforcement learning. Contributed to Google-wise launches in Ads, Search, Workspace, and Cloud.
- On-Device Generative AI: Developed MobileDiffusion, a cutting-edge on-device model for text-to-image generation.
- StyleGAN Effects: Launched multiple StyleGAN-based effects in YouTube Shorts and Photos (Best Take), with on-device ML solutions.
- Face Restoration: Launched on-device ML models trained with generative prior in Photos (Photo Unblur) and Meet (Studio Look).
- Segmentation: Launched on-device segmentation models in Meet.
- MediaPipe: Open-sourced several Computer Vision models, including segmentation, pose estimation, and diffusion plugins.

### Didi Research America

**May 2017 – March 2019**

*Staff Software Engineer, Manager*

*Mountain View, CA*

- Worked on HD Mapping and Location for Autonomous Driving.
- Managed 15 engineers in cross-country sites.

### Google

**October 2012 – May 2017**

*Senior Software Engineer*

*Mountain View, CA*

- Worked with multiple teams in Geo, Ads, and Search.
- One of the early members of Assistant.

### Kodak Research Labs

**June 2009 – August 2009**

*Research Intern*

*Rochester, NY*

### Siemens Corporate Research

**June 2008 – August 2008**

*Research Intern*

*Princeton, NJ*

## Selected Publications

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- MobileDiffusion: Subsecond Text-to-Image Generation on Mobile Devices, [arxiv](#)
- UFOGen: You Forward Once Large Scale Text-to-Image Generation via Diffusion GANs, [arxiv](#)
- DreamInpainter: Text-Guided Subject-Driven Image Inpainting with Diffusion Models, [arxiv](#)
- HiFi Tuner: High-Fidelity Subject-Driven Fine-Tuning for Diffusion Models, [arxiv](#)
- HyperDreamBooth: HyperNetworks for Fast Personalization of Text-to-Image Models, [arxiv](#)
- Taming Encoder for Zero Fine-tuning Image Customization with Text-to-Image Diffusion Models, [arxiv](#)
- Semi-Implicit Denoising Diffusion Models (SIDDMs), *NeurIPS 2023*

- Towards Authentic Face Restoration with Iterative Diffusion Models and Beyond, *ICCV 2023*
- Multiscale Representation for Real-Time Anti-Aliasing Neural Rendering, *ICCV 2023*
- BlazeStyleGAN: A Real-Time On-Device StyleGAN, *CVPRW 2023*
- Efficient Heterogeneous Video Segmentation at the Edge, *CVPRW 2022*
- Instant 3D Object Tracking with Application in Augmented Reality, *CVPRW 2020*
- Instant Motion Tracking and Its Applications to Augmented Reality, *CVPRW 2019*
- Diffusion-Driven Wavelet Design for Shape Analysis, *CRC Press, 2014*
- Anisotropic Elliptic PDEs for Feature Classification., *TVCG, 2013*
- Hierarchical Feature Subspace for Structure-Preserving Deformation, *CAD, 2013*
- Admissible Diffusion Wavelets and Their Applications in Space-Frequency Processing, *TVCG, 2013*
- High-Quality Image Deblurring with Panchromatic Pixels, *TOG, 2012*
- Continuous and Discrete Mexican Hat Wavelet Transforms on Manifolds, *Graphical Models, 2012*
- A Novel Material-Aware Feature Descriptor for Volumetric Image Registration in Diffusion Tensor Space, *ECCV, 2012*
- Robust Dense Registration of Partial Nonrigid Shapes, *TVCG, 2012*
- Image Deconvolution with Multi-stage Convex Relaxation and Its Perceptual Evaluation, *TIP, 2011*
- Diffusion Tensor Weighted Harmonic Fields for Feature Classification, *PG, 2011*
- Multi-scale Anisotropic Heat Diffusion Based on Normal-driven Shape Representation, *The Visual Computer, 2011*
- Efficient Computation of Scale-space Features for Deformable Shape Correspondences, *ECCV, 2010*

## Education

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- Ph.D. in Computer Science, Stony Brook University, 2012
- M.E., Chinese Academy of Sciences, 2007
- B.S., University of Science and Technology of China, 2004

## Awards

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- Google Tech Impact Award, 2023
- Research PA Impact Award, 2023
- Core Tech Impact Award, 2022
- Catacosinos Fellowship for Excellence in Computer Science, 2010