

# Ben Mildenhall

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EDUCATION **University of California, Berkeley** 2015-2020  
Ph.D. in Computer Science  
Advised by Prof. Ren Ng

**Stanford University** 2011-2015  
B.S. in Computer Science (Honors) and Mathematics

EXPERIENCE **Google**, Research Scientist January 2021-  
Working in David Salesin's group.

**Fyusion Inc.**, Research Intern Summer 2018  
Worked with Rodrigo Ortiz-Cayon and Abhishek Kar on deep learning for view synthesis.

**Google**, Research Intern Summer 2017  
Worked in Marc Levoy's group with Robert Carroll, Jiawen Chen, Dillon Sharlet, and Jon Barron on deep learning for multi-image denoising and demosaicking.

**Pixar Animation Studios**, Research Intern Summer 2014  
Worked with Tom Duff, Nelson Max, and Mark Meyer on using sparse voxel octrees for geometry simplification when rendering complex scenes.

**Stanford University**, Undergraduate Research Intern (CURIS program) Summer 2013  
Worked in Pat Hanrahan's group with graduate students Daniel Ritchie and Matt Fisher on using probabilistic inference for reinforcement learning.

PUBLICATIONS /  
PREPRINTS

**DreamFusion: Text-to-3D using 2D Diffusion**  
Ben Poole, Ajay Jain, Jonathan T. Barron, **Ben Mildenhall**  
*ICLR*, 2023 (Outstanding Paper Award)

**Fast and High-quality Image Denoising via Malleable Convolutions**  
Yifan Jiang, Bartlomiej Wronski, **Ben Mildenhall**, Jonathan T. Barron, Zhangyang Wang, Tianfan Xue  
*ECCV*, 2022

**NeRF in the Dark: High Dynamic Range View Synthesis from Noisy Raw Images**  
**Ben Mildenhall**, Peter Hedman, Ricardo Martin-Brualla, Pratul Srinivasan, Jonathan Barron  
*CVPR*, 2022 (oral)

**Mip-NeRF 360: Unbounded Anti-Aliased Neural Radiance Fields**  
Jonathan T. Barron, **Ben Mildenhall**, Dor Verbin, Pratul Srinivasan, Peter Hedman  
*CVPR*, 2022 (oral)

**Ref-NeRF: Structured View-Dependent Appearance for Neural Radiance Fields**  
Dor Verbin, Peter Hedman, **Ben Mildenhall**, Todd Zickler, Jonathan T. Barron, Pratul Srinivasan  
*CVPR*, 2022 (Best Student Paper Honorable Mention)

**Block-NeRF: Scalable Large Scene Neural View Synthesis**  
Matthew Tancik, Vincent Casser, Xinchun Yan, Sabeek Pradhan, **Ben Mildenhall**, Pratul Srinivasan, Jonathan T. Barron, Henrik Kretzschmar  
*CVPR*, 2022 (oral)

**RegNeRF: Regularizing Neural Radiance Fields for View Synthesis from Sparse Inputs**  
Michael Niemeyer, Jonathan T. Barron, **Ben Mildenhall**, Mehdi S. M. Sajjadi, Andreas Geiger,  
Noha Radwan  
*CVPR*, 2022 (oral)

**Zero-Shot Text-Guided Object Generation with Dream Fields**  
Ajay Jain, **Ben Mildenhall**, Jonathan T. Barron, Pieter Abbeel, Ben Poole  
*CVPR*, 2022

**Dense Depth Priors for Neural Radiance Fields from Sparse Input Views**  
Barbara Roessle, Jonathan T. Barron, **Ben Mildenhall**, Pratul Srinivasan, Matthias Niessner  
*CVPR*, 2022

**Mip-NeRF: A Multiscale Representation for Anti-Aliasing Neural Radiance Fields**  
Jonathan T. Barron, **Ben Mildenhall**, Matthew Tancik, Peter Hedman, Ricardo Martin-Brualla,  
Pratul Srinivasan  
*ICCV*, 2021 (Best Paper Honorable Mention)

**Baking Neural Radiance Fields for Real-Time View Synthesis**  
Peter Hedman, Pratul Srinivasan, **Ben Mildenhall**, Jonathan T. Barron, Paul Debevec  
*ICCV*, 2021 (oral)

**Learned Initializations for Optimizing Coordinate-Based Neural Representations**  
Matthew Tancik\*, **Ben Mildenhall\***, Terrance Wang, Divi Schmidt, Pratul Srinivasan, Jonathan  
T. Barron, Ren Ng  
*CVPR*, 2021 (oral)

**NeRV: Neural Reflectance and Visibility Fields for Relighting and View Synthesis**  
Pratul Srinivasan, Boyang Deng, Xiuming Zhang, Matthew Tancik, **Ben Mildenhall**, Jonathan T.  
Barron  
*CVPR*, 2021

**Neural Reflectance Fields for Appearance Acquisition**  
Sai Bi\*, Zexiang Xu\*, Pratul Srinivasan, **Ben Mildenhall**, Kalyan Sunkavalli, Miloš Hašan, Yannick  
Hold-Geoffroy, David Kriegman, Ravi Ramamoorthi  
*arXiv*, 2020

**Fourier Features Let Networks Learn High Frequency Functions in Low Dimensional  
Domains**  
Matthew Tancik\*, Pratul Srinivasan\*, **Ben Mildenhall\***, Sara Fridovich-Keil, Nithin Raghavan,  
Utkarsh Singhal, Ravi Ramamoorthi, Jonathan T. Barron, Ren Ng  
*NeurIPS*, 2020 (spotlight)

**NeRF: Representing Scenes as Neural Radiance Fields for View Synthesis**  
**Ben Mildenhall\***, Pratul Srinivasan\*, Matthew Tancik\*, Jonathan T. Barron, Ravi Ramamoorthi,  
Ren Ng  
*ECCV*, 2020 (Best Paper Honorable Mention)

**Deep Multi Depth Panoramas for View Synthesis**  
Kai-En Lin, Zexiang Xu, **Ben Mildenhall**, Pratul P. Srinivasan, Yannick Hold-Geoffroy, Stephen  
DiVerdi, Qi Sun, Kalyan Sunkavalli, Ravi Ramamoorthi  
*ECCV*, 2020

**Lighthouse: Predicting Lighting Volumes for Spatially-Coherent Illumination**  
Pratul Srinivasan\*, **Ben Mildenhall\***, Matthew Tancik, Jonathan T. Barron, Richard Tucker,  
Noah Snaveley  
*CVPR*, 2020

**StegaStamp: Invisible Hyperlinks in Physical Photographs**  
Matthew Tancik\*, **Ben Mildenhall\***, Ren Ng

CVPR, 2020

**Local Light Field Fusion: Practical View Synthesis with Prescriptive Sampling Guidelines**

**Ben Mildenhall\***, Pratul Srinivasan\*, Rodrigo Ortiz-Cayon, Nima Khademi Kalantari, Ravi Ramamoorthi, Ren Ng, Abhishek Kar  
*SIGGRAPH*, 2019

**Unprocessing Images for Learned Raw Denoising**

Tim Brooks, **Ben Mildenhall**, Tianfan Xue, Jiawen Chen, Dillon Sharlet, Jonathan T. Barron  
*CVPR*, 2019 (oral)

**Burst Denoising with Kernel Prediction Networks**

**Ben Mildenhall**, Jonathan T. Barron, Jiawen Chen, Dillon Sharlet, Ren Ng, Robert Carroll  
*CVPR*, 2018 (spotlight)

**DiffuserCam: Lensless Single-exposure 3D Imaging**

Nick Antipa, Grace Kuo, Reinhard Heckel, **Ben Mildenhall**, Emrah Bostan, Ren Ng, Laura Waller  
*Optica*, 2017

**Approximations for the Distribution of Microflake Normals**

Nelson Max, Tom Duff, **Ben Mildenhall**, Yajie Yan  
*The Visual Computer*, 2017

**Controlling Procedural Modeling Programs with Stochastically-Ordered Sequential Monte Carlo**

Daniel Ritchie, **Ben Mildenhall**, Noah D. Goodman, Pat Hanrahan  
*SIGGRAPH*, 2015

SERVICE

Area Chair for CVPR 2023

Outstanding reviewer award for ECCV 2022

Reviewer for CVPR, ICCV, ECCV, SIGGRAPH, SIGGRAPH Asia, NeurIPS

Co-instructor, CS184 (Computer Graphics)

Summer 2020

Graduate Student Instructor, CS184

Spring 2017

Graduate Student Instructor, CS184

Spring 2016

HONORS AND AWARDS

ICLR Outstanding Paper Award

2023

CVPR Best Student Paper Honorable Mention

2022

ACM Doctoral Dissertation Award Honorable Mention

2021

ICCV Best Paper Honorable Mention

2021

David J. Sakrison Memorial Prize

2021

Outstanding Graduate Student Instructor Award

2021

ECCV Best Paper Honorable Mention

2020

ICCP Best Demo

2017

Tong Leong Lim Pre-Doctoral Prize, UC Berkeley

2017

Fannie and John Hertz Foundation Graduate Fellowship

2015

Terman Award, Stanford University

2015

Sterling Award, Stanford University

2015

CS348B rendering competition Grand Prize, Stanford University

2013

SKILLS

Python/NumPy, JAX, Tensorflow, C/C++, OpenGL, CUDA, Matlab