Noah Stier

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Education

University of California, Santa Barbara
Ph.D. in Computer Science (Expected Summer 2024) 2019-present
M.S. in Computer Science 2019-2024

- Machine learning systems for 3D vision & reconstruction (robotics, mixed reality, autonomous driving, and more).
- Published at top-tier venues with open-source code and production-quality results on real-world data.

University of California, Los Angeles
B.S. in Computational & Systems Biology 2012-2016

- Computational methods for medical imaging.

Industry Experience

Apple Seattle, WA
Research Intern 2022-2023

- Image-based 3D reconstruction for augmented reality applications.
- Two papers accepted to ICCV 2023: LivePose (oral) and FineRecon.

Toyon Research Goleta, CA
Research Engineer 2017-2020

- R&D of vision systems using airborne and space-based sensors, full-motion video, LiDAR, RGB, and IR imagery.
- Novel machine learning architectures and training pipelines to address unique and challenging data domains.
- High-performance software implementations with C++ and CUDA.

Procore Technologies Carpinteria, CA
Software Engineer 2016-2017

- Developed a high-throughput web service for vision-based analysis of construction documents.
- Maintained and extended a large Ruby on Rails web application, collaborating effectively with a team of over 100 developers and designers.

Publications

ICCV 2023 **Noah Stier**, Baptiste Angles, Liang Yang, Yajie Yan, Alex Colburn, Ming Chuang. LivePose: Online 3D Reconstruction from Monocular Video with Dynamic Camera Poses. *International Conference on Computer Vision*, 2023.

ICCV 2023 **Noah Stier**, Anurag Ranjan, Alex Colburn, Yajie Yan, Liang Yang, Fangchang Ma, Baptiste Angles. FineRecon: Depth-aware Feed-forward Network for Detailed 3D Reconstruction. *International Conference on Computer Vision*, 2023.

CVPR 2022 Chengyuan Xu, Boning Dong, **Noah Stier**, Curtis McCully, D. Andrew Howell, Pradeep Sen, Tobias Höllerer. Interactive Segmentation and Visualization for Tiny Objects in Multi-megapixel Images. *Conference on Computer Vision and Pattern Recognition*, 2022 (demo track).

WACV 2022 A Vepa, A Choi, N Nakhaei, W Lee, **Noah Stier**, A Vu, G Jenkins, X Yang, M Shergill, M Desphy, K Delao, M Levy, C Garduno, L Nelson, W Liu, F Hung, F Scalzo. Weakly-Supervised Convolutional Neural Networks for Vessel Segmentation in Cerebral Angiography. *Winter Conference on Applications of Computer Vision*, 2022.

3DV 2021 **Noah Stier**, Alexander Rich, Pradeep Sen, Tobias Höllerer. VoRTX: Volumetric 3D Reconstruction with Transformers for Voxel-wise View Selection and Fusion. *International Conference on 3D Vision*, 2021.

3DV 2021 Alexander Rich, **Noah Stier**, Pradeep Sen, Tobias Höllerer. 3DVNet: Multi-View Depth Prediction and Volumetric Refinement. *International Conference on 3D Vision*, 2021.

DCS 2020 Abhejit Rajagopal, **Noah Stier**, William Nelson, Shivkumar Chandrasekaran, Andrew P Brown. DeepOSM-3D: Recognition in Aerial LiDAR RGBD Imagery. *SPIE Defense and Commercial Sensing*, 2020.

MI 2019 Abhejit Rajagopal, **Noah Stier**, Joyoni Dey, Michael A King, Shivkumar Chandrasekaran. Towards Deep Iterative-Reconstruction Algorithms for Computed Tomography (CT) Applications. *SPIE Medical Imaging*, 2019.

BIBM 2015 **Noah Stier**, Nicholas Vincent, David Liebeskind, Fabien Scalzo. Deep learning of tissue fate features in acute ischemic stroke. *IEEE International Conference on Bioinformatics and Biomedicine*, 2015.

BIBM 2015 Nicholas Vincent, **Noah Stier**, Songlin Yu, David S Liebeskind, Danny JJ Wang, Fabien Scalzo. Detection of Hyperperfusion on Arterial Spin Labeling Using Deep Learning. *IEEE International Conference on Bioinformatics and Biomedicine*, 2015.

Mentorship and Service

UCSB Summer Institute in Mathematics and Science (SIMS) 2023

- Designed and led an introductory computer science project for incoming undergraduate students, using OpenCV to create webcam video effects.

UCSB Early Research Scholarship Program (ERSP) 2020-2021

- Mentor for a team of undergraduate researchers using simulation to produce training data for 3D machine learning.

Reviewer

- CVPR, ECCV, WACV
- TPAMI, Journal of Intelligent Systems, Pattern Rec. Letters, TCSVT