

AKIN CALISKAN

Center for Vision, Speech and Signal Processing (CVSSP), University of Surrey
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EDUCATION

Ph.D. Student in Electrical and Electronics Engineering Department

University of Surrey, United Kingdom

October 2017 - Present

Center for Vision, Speech and Signal Processing (CVSSP)

Research Topic: Dynamic 3D Human Reconstruction from Video

Supervisor: Prof. Adrian Hilton, Dr. Armin Mustafa

M.Sc. Student in Electrical and Electronics Engineering Department

Middle East Technical University, Turkey

September 2014 - August 2017

Track: Signal Processing

Relevant Courses: Pattern Recognition and Deep Learning, Machine Vision, Statistical Signal Processing, Digital Geometry Processing, Advanced Probability and Stochastic Processes

Thesis: Stratified Calibration and Group Synchronized Focal Length Estimation for Structure from Motion Algorithms

Supervisor: Prof. Aydın Alatan, Dr. Engin Tola

B.Sc. Student in Electrical and Electronics Engineering Department

Minor in Computer Engineering

Middle East Technical University, Turkey

September 2009 - July 2014

Senior Year Focus: Telecommunications

RESEARCH INTERESTS

My research interests lie in the area of 3D computer vision and machine learning, particularly supervised and self-supervised deep learning methods for model-free 3D reconstruction of dynamic human body from stereo or monocular camera inputs in the wild. I work on algorithms for learning 3D reconstruction from synthetic 3D human data using diverse and realistic data generation methods. My research goal is to develop deep learning methods for model-free 3D human shape estimation from minimum number of cameras to initiate new interactive communication and entertainment channels for AR/VR systems.

PUBLICATIONS

Google Scholar Profile

Multi-Person Implicit Reconstruction from a Single Image

Armin Mustafa, **Akin Caliskan**, Lourdes Agapito, Adrian Hilton

2021 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)

Multi-View Consistency Loss for Improved Single-Image 3D Reconstruction of Clothed People

Akin Caliskan, Armin Mustafa, Evren Imre, Adrian Hilton

2020 Asian Conference on Computer Vision (ACCV)

Learning Dense Wide Baseline Stereo Matching for People

Akin Caliskan, Armin Mustafa, Evren Imre, Adrian Hilton

2019 IEEE International Conference on Computer Vision Workshops (ICCVW)

Superpixel Based Hyperspectral Target Detection

Akin Caliskan, Emrehan Batı, Alper Koz, Aydın Alatan

2016 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)

Registration of MWIR-LWIR Hyperspectral Images

Alper Koz, **Akin Caliskan**, Aydın Alatan

2016 IEEE Workshop on Hyperspectral Image and Signal Processing (WHISPERS)

Hyperspectral Superpixel Extraction Using Boundary Updates Based on Optimal Spectral Similarity Metric

(Oral Presentation)

Akin Caliskan, Emrehan Batı, Alper Koz, Aydın Alatan

2015 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)

Hyperspectral Anomaly Detection Method Based on Autoencoder

(Oral Presentation)

Emrehan Batı, **Akin Caliskan**, Alper Koz, Aydın Alatan

2015 SPIE Remote Sensing

Anomaly Based Target Detection in Hyperspectral Images via Graph Cuts

(Oral Presentation)

Acar Erdinc, Davut Cesmeci, Emrehan Batı, **Akin Caliskan**, Alper Koz, A. Aydın Alatan, Selim Aksoy, Sarp Erturk

2015 IEEE Turkey Section Signal Processing Conference

INTERNSHIPS

NVIDIA Research

Research Intern in Learning and Perception Research (LPR) Group

Supervisors: Umar Iqbal, Pavlo Molchanov, Koki Nagano, Jan Kautz

Santa Clara, USA

February 2021 - June 2021

Disney Research

Research Intern in Vision and Sensing Group

Developed volumetric 3D modelling pipeline of large scale indoor environments. Integrated image based localization system on reconstructed 3D models for the entertainment systems in the Disney amusement parks. Collaborated with Disney Imagineering USA.

Supervisor: Paul Beardsley

Zurich, Switzerland

August 2015 - November 2015

ACADEMIC AND INDUSTRY EXPERIENCE

University of Surrey

Teaching Assistant in Electrical and Electronics Engineering
Lab demonstration for C/C++ and Python programming courses:
Computer Vision and Graphics (EEE2041)
Computer Vision and Pattern Recognition (EEE3032)
Computer Algorithms and Architecture (EEE2048)
Programming in C (EEE1035)
C++ and Object Oriented Design (EEE2047)
Computer and Digital Logic (EEE1033)

Guildford, United Kingdom

October 2017 - Present

Visio Impulse

Research Engineer in Computer Vision (Part-Time)
Developed supervised and self-supervised deep learning solutions for registration and semantic segmentation of point clouds that are scanned in both indoor and outdoor scenes.

London, United Kingdom

June 2020 - January 2021

Kuartis Technology

Research Engineer in Computer Vision (Full-Time)
Developed a camera calibration unit for outdoor sports camera caption system to generate visual content for virtual reality mobile application where people can experience watching football games in a stadium.
Developed dense stereo reconstruction framework from aerial images for the accurate estimation of topological changes on the surface.

METU Technopark, Turkey

August 2016 - August 2017

Center for Image Analysis

Research Scientist in Computer Vision (Full-Time)
Developed supervised vegetation classification algorithms for airborne hyperspectral images. Developed keypoint matching and mutual information maximization based registration algorithms for different type of hyperspectral images captured by different cameras.

METU, Turkey

August 2014 - July 2015

Comodo Internet Security

Software Engineer in Computer Vision (Part-Time)
Developed large-scale logo recognition algorithm based on cascade classifiers running real time on web browsers for email anti-phishing system.

METU Technopark, Turkey

April 2014 - August 2014

SKILLS

Programming Languages: C/C++, Python, CUDA
Machine Learning Libraries: PyTorch, Tensorflow
Programming APIs: OpenCV, OpenGL, OpenMP, Blender, Open Inventor, Eigen, Boost, ROS
Software Packages: LaTeX, Git, MATLAB, Xcode, Eclipse, Mitsuba

PERSONAL

Citizenship: Turkish,
Language: English (Full Professional Proficiency) and Turkish
Date of Birth: November 21, 1990
Memberships: Student member of IEEE (since 2009) and BMVA (Since 2017)

HONORS AND AWARDS

IEEE International Conference on Computer Vision (ICCV) 2019 Student Travel Grant
University of Surrey, Faculty of Engineering and Physical Sciences Ph.D. Scholarship
Accepted to "2018 International Computer Vision Summer School (ICVSS)", Sicily, Italy
Merit leadership scholarship of Turkish Education Association (TEV) for six semesters
Graduated from Middle East Technical university with honor degree
Undergraduate Senior Year Project | Best Project Award

INVITED TALKS

BMVA (London, UK), *October 2019*
Magic Leap (Virtual San Francisco, USA), *December 2020*
Vicon (Virtual London, UK), *January 2021*

REFERENCES

Adrian Hilton
Professor of Computer Vision and Graphics
Distinguished Professor of University of Surrey
Director of Center for Vision, Speech and Signal Processing (CVSSP), University of Surrey, UK

Armin Mustafa
Senior Research Fellow in Computer Vision, University of Surrey, UK
Royal Academy of Engineering Research Fellow

Engin Tola,
Founder and CEO of Aurvis