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-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, Emrecan 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, Emrecan Batı, Alper Koz, Aydın Alatan
2015 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)

Hyperspectral Anomaly Detection Method Based on Autoencoder
(Oral Presentation)
Emrecan 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, Emrecan Batı, **Akin Caliskan**, Alper Koz, A. Aydın Alatan, Selim Aksoy, Sarp Erturk
2015 IEEE Turkey Section Signal Processing Conference

INTERNSHIP

Disney Research   **Zurich, Switzerland**
Research Intern in Vision and Sensing Group   *August 2015 - November 2015*
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: Dr. Paul Beardsley

ACADEMIC AND INDUSTRY EXPERIENCE

University of Surrey   **Guildford, United Kingdom**
Teaching Assistant in Electrical and Electronics Engineering   *October 2017 - Present*
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)

Kuartis Technology   **METU Technopark, Turkey**
Research Engineer in Computer Vision   *August 2016 - August 2017*
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.

Center for Image Analysis   **METU, Turkey**

Research Scientist in Computer Vision   *August 2014 - July 2015*

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.

Comodo Internet Security   **METU Technopark, Turkey**

Part-Time Software Engineer in Computer Vision   *April 2014 - August 2014*

Developed large-scale logo recognition algorithm based on cascade classifiers running real time on web browsers for email anti-phishing system.

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

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