Baris Gecer

Curriculum Vitae

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Education

2016–Present **Ph.D. in Computing**, *Imperial College*, *London, UK*.
- *Advisors*: Stefanos Zafeiriou and Tae-Kyun (T-K) Kim
- *Collaborator*: Josef Kittler
- *Topic*: Synthesizing Photorealistic Face Images of New Identities by 3D Morphable Model and Generative Adversarial Networks for face recognition and 3D reconstruction

2014 – 2016 **M.Sc in Computer Engineering**, *Bilkent Universiy*, *Ankara, Turkey*.
- *Advisor*: Selim Aksoy
- *Topic*: Computer Aided Analysis of Whole-Slide Breast Histopathology Images with Convolutional Neural Networks (`thesis`)
- *GPA*: 3.86/4

July 2015 **International Computer Vision Summer School (ICVSS)**, *Sicily, Italy*.
- *Theme*: Learning to See
- *Speakers*: Y. Bengio, T. Brox, D. Buchmuller, D. Cremers, F-F. Li, M. Pollefeys, C. Snoek, S. Soatto, D. Tsao, A. Vedaldi, R.Vidal, T. Kanade, S. Mallat, E. N. Superieure, M.Zeiler

2009 – 2014 **B.Sc in Computer Engineering**, *Hacettepe Universiy*, *Ankara, Turkey*.
- *GPA*: 3.55/4
- 5^{th}/112 – with High Honors

2012 – 2013 **Erasmus exchange student (B.Sc)**, *Universiy of Groningen*, *The Netherlands*.
- *GPA*: 8.43/10
- *followed* M.Sc Artificial Intelligence program

Publications

TPAMI Stylianos Ploumpis, Evangelos Ververas, Eimear O' Sullivan, Stylianos Moschoglou, Haoyang Wang, Nick Pears, William A. P. Smith, **Baris Gecer**, & Stefanos Zafeiriou. *Towards a complete 3D morphable modelof the human head*.

CVPR 2020 Alexandros Lattas, Stylianos Moschoglou, **Baris Gecer**, Stylianos Ploumpis, Vasileios Triantafyllou, Abhijeet Ghosh, & Stefanos Zafeiriou. *AvatarMe: Realistically Renderable 3D Facial Reconstruction "in-the-wild"*.

arXiv **Baris Gecer**, Alexander Lattas, Stylianos Ploumpis, Jiankang Deng, Athanasios Papaioannou, Stylianos Moschoglou, & Stefanos Zafeiriou. *Synthesizing Coupled 3D Face Modalities by Trunk-Branch Generative Adversarial Networks*.

CVPR 2019 **Baris Gecer**, Stylianos Ploumpis, Irene Kotsia, & Stefanos Zafeiriou. *GANFIT: Generative Adversarial Network Fitting for High Fidelity 3D Face Reconstruction*. In conference on Computer Vision and Pattern Recognition 2019

ECCV 2018 **Baris Gecer**, Binod Bhattarai, Josef Kittler, & Tae-Kyun Kim. *Semi-supervised Adversarial Learning to Generate Photorealistic Images of New Identities from 3D Morphable Model*. In European Conference on Computer Vision 2018

PR 2018 **Baris Gecer**, Selim Aksoy, Ezgi Mercan, Linda G. Shapiro, Donald L. Weaver, and Joann G. Elmore. *Detection and Classification of Cancer in Whole Slide Breast Histopathology Images Using Deep Convolutional Networks.* Pattern Recognition, Special Issue on Deep Learning for Computer Aided Cancer Detection and Diagnosis with Medical Imaging, 84 (2018): 345-356

ICCVW 2017 **Baris Gecer**, Vassileios Balntas, and Tae-Kyun Kim. *Learning Deep Convolutional Embeddings for Face Representation Using Joint Sample-and Set-Based Supervision.* In IEEE International Conference on Computer Vision, pp. 1665-1672. 2017.

IMAVIS 2017 **Baris Gecer**, George Azzopardi, and Nicolai Petkov. *Color-blob-based COSFIRE filters for object recognition.* Image and Vision Computing 57 (2017): 165-174.

M.Sc Thesis 2016 **Baris Gecer**. *Detection and Classification of Breast Cancer in Whole Slide Histopathology Images Using Deep Convolutional Networks.* Diss.Bilkent University, 2016.

Experience

Research

October 2019 – Present **Computer Vision Scientist**, FaceSoft, London, UK.
- High resolution synthetic face generation from large scale facial 3D scans
- 6K- BRDF renderable, identity preserving 3D face&full-head reconstruction (`published in CVPR 2020`, `published in TPAMI`)

May 2019 – October 2019 **Research Intern (6 months)**, Facebook Reality Labs, Pittsburgh, USA.
- Photorealistic Telepresence
- Supervisor : Yaser Sheikh & Fernando de la Torre

July 2018 – April 2019 **Computer Vision Scientist**, FaceSoft, London, UK.
- High resolution synthetic face generation from large scale facial 3D scans
- High quality, identity preserving 3D face reconstruction (`published in CVPR 2019`)

Feb 2018 – July 2018 **Research Engineer**, Visio Impulse, London, UK.
- Unsupervised anomaly detection by auto-encoders and generative adversarial networks
- Consultancy to Shell Global AI team on varying computer vision applications
  - 'Pumping gas while engine is on' detection with Mask-RCNN and activity recognition
  - Face verification
  - Masked face (burglary) detection

Oct 2016 – Present **Research Assistant**, Imperial College, London, UK.

Groups:
- Intelligent Behaviour Understanding Group (iBUG)
- Imperial Computer Vision & Learning Lab (ICVL)
- (collaboration with) Centre for Vision, Speech and Signal Processing (CVSSP)

Projects:
- FACER2VM (EPSRC)
  - Proposed a generative adversarial framework to generate photorealistic face images of new identities with wide ranges of expressions, poses, and illuminations conditioned by a 3D morphable model (`published in ECCV 2018`).
  - Set-based face recognition by max-margin Loss and SVMs (`published in ICCVW 2017`).
- TeSLA: An Adaptive Trust-based e-assesment System for Learning (EU)
  - Cutting edge face verification system for an e-assessment platform.

Nov 2015 – June 2016 **Computer Vision and Machine Learning Scientist**, MIPS, Kayseri, Turkey.
- Detection and tracking of sperm cells on microscopic videos with convolutional neural networks and 2D image morphology. Then their mobility is measured based on tracking for diagnosis. The startup has received many awards and investment after this project.

Sep 2014 – Jun 2016 **Research Assistant**, Bilkent University, Ankara, Turkey.

Group: - RETINA Vision and Learning Group

Projects: - Detection and classification of whole-slide breast histopathology (TUBITAK)
- Proposed a cascaded framework on detection and classification of whole-slide breast histopathology images by mimicking pathologists with deep convolutional learning (`published in PR 2018`)
- Applied some visualization techniques for better understanding of the learned features and the overall information captured by the network.
- Implemented segmentation of breast tissue by graph cut on superpixels

Mar 2013 – Jun 2013 **Research Intern**, University of Groningen, Groningen, The Netherlands.

Group: - Intelligent Systems Lab.

Project: - Colour COSFIRE Filters
- Developed an innovative method for joint object detection and recognition that combines shape and color information (`published in IMAVIS 2017`)

Teaching

Oct 2017 – Jun 2018 **Teaching Assistant**, Imperial College, London, UK.
- M.Eng. student supervision: Guillaume Rame
- EE462 Computer Vision (Spring 2018)
- EE468 Pattern Recognition (Fall 2017)
- EE1-10 Mathematics I (Fall 2017)

Sep 2014 – Jun 2016 **Teaching Assistant**, Bilkent University, Ankara, Turkey.
- CS464 Introduction to Machine Learning (Spring 2016)
- CS484 Image Analysis (Fall 2015)
- CS113 Introduction to Computing for Engineers (Spring 2015)
- CS101 Algorithms and Programming 1 (Fall 2014)

Computer skills

Github Profile	github.com/barisgecer
Programming	Python, Matlab, Java, Shell, C/C++, C#, Javascript, SQL, Assembly
Frameworks	Tensorflow, Keras, MatConvNet, PyTorch
Tools	Git, LaTeX

Academic Activities

Since 2017	Oral/Poster presentation at CVPR/ICCV/ECCV and various workshops
Aug 2017	Student member of IEEE
Sep 2017	Student Volunteer as Videographer at BMVC 2017

Reviewer
- ECCV 2020
- AAAI 2020
- CVPR 2020
- IJCV (Special Issue on Deep Learning for Face Analysis)
- JMI
- CVIU
- ICCV 2019
- CVPR 2019
- BMVC 2018
- ECCV 2018
- ICCV 2017

Awards & Recognitions

Nov 2015 Ministry of Education PhD scholarship for tuition and living expenses for 4 years

Sep 2014 TUBITAK ARDEB scholarship for 2 years of M.Sc program

Sep 2012 Scholarship for the expenses of 10 months Erasmus exchange program in Netherlands

Oct 2012 Regional representative at the ACM ICPC southeastern regional programming contest

Apr 2012 3rd place in ACM ICPC programming contest in Hacettepe University

Feb 2012 Microsoft Student Partner MSP

Mar 2010 2rd place in Hacettepe University programming contest

Sep 2009 Hacettepe Excellence scholarship during B.Sc program

Jan 2008 InfoMatrix international programming contest finalist during high school