G. Meltem **Atay**

PhD Candidate · Neuroscience and Neurotechnology

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As a graduate student in Neuroscience and Neurotechnology field, I am passionate about discerning the interplay between human cognition and artificial intelligence. Machine learning, deep learning and their applications into brain imaging data are main research fields that excite me in addition to my overarching interest in understanding brain connectome changes during aging process. Accordingly, I am very much interested in applications of recurrent neural networks in the field of neuroscience and what they could offer for deep learning research area along with generative adversarial networks. Merging of computational neuroscience with deep learning has revolutionary potential in addressing a wide range of outstanding problems throughout the computational sciences. Hence, I would like to be part of this astonishing revolution in the field of artificial intelligence as a deep learning researcher.

Education

Middle East Technical University, Institute of Natural and Applied Sciences — *Ankara, Turkey*

Ph.D. in Neuroscience and Neurotechnology — *September 2015 - Present*

- **Ph.D Dissertation Title:** *Machine Learning on Neuroimages for Diagnosis of Neurodegenerative Diseases.*

Middle East Technical University, Department of Mathematics — *Ankara, Turkey*

Scientific Preparation Period Before Ph.D. Program — *September 2014 - September 2015*

Hacettepe University, Institute of Health Sciences — *Ankara, Turkey*

M.Sc. in Medical Biochemistry — *September 2012 - August 2014*

- **M.Sc. Dissertation Title:** *Effects of Statins on Human Serum Butyrylcholinesterase and Erythrocyte Acetylcholinesterase.*

Online Education

Udacity Deep Learning Nanodegree — *Online*

Facebook PyTorch Challenge Winner — *Graduated, February 2019*

- I was one of the fully funded by Facebook in a group of 300 scholars selected from 6000 active participants through a capstone project challenge of flower species classification .

Honors & Awards

3.53/4.00 cGPA	**Graduate Courses Performance Award**, Middle East Technical University, Institute of Natural and Applied Sciences	*2016*
3.44/4.00 cGPA.	**High Honor**, Hacettepe University Department of Medical Biochemistry	*2014*

Technical Skills

Programming Languages

Most experience: *Python and MATLAB*

Little experience: *Java, HTML, CSS, SQL and PHP*

Software Frameworks

Deep Learning: *Tensorflow-Keras, PyTorch*

Neuroscience: *SPM12*

Academic Publications

NeurIPS 2018 — *Online Gallery Submission*

Machine Learning for Creativity and Design Workshop — *December 2018*

- Atay M., EbruGAN: Digital Art Creation Based On Mixture of Traditional Turkish Art and Human Faces.
- http://www.aiartonline.com/community/meltem-atay-sebnem-ozdemir-aysin-tasdelen/

2018 Innovations in Intelligent Systems and Applications (INISTA) — *IEEE Xplore Proceedings.*

Machine Learning: Methodologies, Applications and Trends (MLMAT 2018) — *July 2018*

- Bircanoğlu C., Atay M., Beşer F., Genç O., Kızrak M-A., RecycleNet: Intelligent Waste Sorting Using Deep Neural Networks.
- Transfer learning experimentation with little number of natural images

MATTER — *METU*

Undergraduate Research Journal — *December 2016*

- Atay M., Baskın Ö., Cantürk E., Kara İ., Koçak İ., Kürkcü A., Şahin B., Alternative Rehabilitation Solutions for Cerebral Palsy.

Posters and Presentations

Queer in AI NeurIPS 2019 Workshop — *Vancouver, Canada*

Oral Presentation — *December 2019*

- Atay MG., Transformer-Based Unsupervised Machine Translation Study from Gender-less Languages

The Association of European Operational Research Societies Conference (EURO-k 2019) - InteriOR 2019 — *Dublin, Ireland - Medan, Indonesia*

Oral Presentation — *June - December 2019*

- Atay MG., Weber G-W., Classification and Generation of Digital Marble Art (EBRU) by revisiting OR via Deep Learning

Machine Learning Summer School in Steppe — *Ankara, Turkey*

Poster Presentation — *August 2017*

- Atay M., Hacettepe, August 2017. Motif and Pattern Design Generation using Deep Convolutional Generative Adversarial Networks

New techniques in Machine Learning and Data Mining Summer School — *Ankara, Turkey*

Poster Presentation — *September 2016*

- Atay M., Halıcı U., Intelligent Methods for Early Diagnosis of Parkinson's disease.

The Association of European Operational Research Societies Conference (EURO-K 2016) — *Poznan, Poland*

Oral Presentation — *June - August 2019*

- Atay M., Weber G-W., Making Art by Inspirations of Mathematics.

Teaching Experience

Lead Instructor — *Ankara*

Deep Learning Türkiye, Ankara Study group — *February 2018 - July 2018*

- Lead a study group to complete convolutional neural networks lecture series of Coursera deeplearning.ai course.
- Translated and prepared educational material for the group of people with different educational backgrounds

Lecturer - Voluntary Teacher — *Ankara*

Ankara Yıldırım Beyazıt University — *January 2018 - June 2018*

- Gave introductory lecture series to computer engineering undergraduate students,
- Prepared a basic curriculum for Python programming and fundamentals of deep learning.

Voluntary Teaching Assistant — *Ankara*

Computational Neuroscience Course - NSNT 501 — *September 2017 - January 2018*

- Helped to prepare tutorials about MATLAB and Python programming.
- Introduced the basics of computational neuroscience to ten graduate students from different research disciplines.

Instructor *METU - Ankara*

DeepMETU, 16 week long course *September 2017 - January 2018*

- Collaborated with engineering students to form DeepMETU a student lead applied course.
- Took part in the curriculum, gave a lecture about auto encoders, generative adversarial networks and image style transfer algorithm.

Participant *METU- Ankara*

Interdisciplinary Design Studio at METU, Department of Architecture and Design *January - April 2016*

- Summarized results in undergraduate level journal (MATTER).
- Participated in several industrial seminars.
- Actively took part in finalizing design process of a rehabilitation solution for children in need, especially for rehabilitation of upper extremity problems in cerebral palsy.
- Guided a group of undergraduate students from different backgrounds into design process.
- Learned simple architecture of embedded systems and applied basic codes on Arduino-Uno platform.

Voluntary Lecture Assistant *Ankara*

Tutorial Sessions of Applied Biochemistry Laboratory, Hacettepe University, Faculty of Medicine *September 2012 - August 2014*

- As a MSc. student, I gained experience at protein purification techniques, spectroscopy technology and basic scientific quantification.
- Participated and assisted in laboratory tutorial sessions in Biochemistry laboratories.
- Gave tutorials to group of graduate and undergraduate students about spectroscopy techniques.
- Guided summer internship of several undergraduate students

Conferences and Courses

December 2019	**Speaker**, Queer in AI NeurIPS 2019 Workshop	*Vancouver, British Columbia, Canada*
December 2019	**Reviewer**, Woman in Machine Learning Workshop 2019 co-located with NeurIPS 2019	*Vancouver, British Columbia, Canada*
July-August 2019	**Attendee**, Neurohackademy 2019 Summer Course	*Seattle, Washington, USA*
June 2019	**Attendee**, International Conference on Machine Learning (ICML 2019)	*Long Beach, California, USA*
December 2018	**Attendee**, Social Conference on Machine Learning (SOCML 2018)	*Toronto, Ontario, Canada*
January-April 2016	**Attendee**, Interdisciplinary Design Studio (IDS 2016)	*Ankara, Turkey*

References

1	**Uğur Halıcı, Ph.D**, Ph.D Thesis Supervisor, METU Neuroscience and Neurotechnology Department Head	*halici@metu.edu.tr*
2	**Bülent Elibol, MD-Ph.D**, Ph.D Thesis Co-Supervisor	*elibol@hacettepe.edu.tr*
3	**Gerhard-Wilhelm Weber, Ph.D**, Professor, Affiliated Faculty of Neuroscience and Neurotechnology Department	*gerhard.weber@put.poznan.pl*