Mehmet Serkan APAYDIN

Education:

Bilkent University, Ankara, TURKEY
- B.Sc., Electrical Engineering, June 1997.

Stanford University, Stanford, CA USA
- M.S., Electrical Engineering, June 1999.
- Ph.D., Electrical Engineering, September 2004.

Employment:

Stanford University, Stanford, CA USA
- Research and Teaching Assistant, Department of Computer Science (15/9/1997 – 30/8/2004)
- Teaching assistant for Motion planning and C++ classes
- Advisors: Prof. Jean-Claude Latombe and Prof. Doug Brutlag

Compaq Cambridge Research Labs, Cambridge, MA USA
- Summer intern (15/6/2000-15/9/2000)
- Research on whole genome assembly algorithms, paper in Recomb conference
- Advisor: Prof. Simon Kasif

Dartmouth College, Hanover, NH USA
- Research Associate, Computer Science Department (15/11/2004 – 30/8/2006)
- Protein structural bioinformatics research, paper in Recomb conference
- Advisor: Prof. Bruce R. Donald

Duke University, Durham, NC USA
- Research Associate, Computer Science Department (1/9/2006 – 30/8/2008)
- NMR protein structure-based assignment algorithms, paper in J. Biomolecular NMR
- Advisor: Prof. Bruce R. Donald

Sabanci University, Istanbul, TURKEY
- Visiting Faculty Member (1/9/2008 – 30/6/2010), Principal Investigator (1/9/2010 – 30/8/2013)
  Faculty of Engineering and Natural Sciences
- Taught grad level bioinformatics, algorithms for computational structural biology, motion planning
- Recipient of European Union Marie Curie International Reintegration Grant (75000 euros)
- Recipient of Tübitak research grant (92000 TRY)
- Research on NMR protein structural based assignments

Istanbul Sehir University, Istanbul, TURKEY
- Faculty Member (19/7/2010 – 10/2020) (On leave from 3/2018 to 6/2019)
  College of Engineering and Natural Sciences, Department of Computer Science.
- Classes on AI, deep learning, machine learning, natural language processing, computer vision, reinforcement learning, linear dynamical systems, Unix, EECS I and II, software-based startups.
- Bilateral research grant with CNRS Gif-sur-Yvette on NMR software development for structure-based assignments
- Research on traffic speed prediction using machine learning
- Papers on GECCO, SIU conferences, RAIRO journal
- Graduate student supervision

Inria, Sophia Antipolis, FRANCE.
- College de France Fellow (1/3/2018 – 6/2019)
- Deep learning for protein structural informatics

Kariyer.net, Istanbul
- Research and Development Consultant (3/2020-April 2021)
  Natural language processing projects using deep learning, in Turkish.

Algorithms in HR domain (CV parsing, CV – job ad matching, job ad text generation), content moderation for job ads, messages.

Istanbul Medipol University, Istanbul, TURKEY

- Faculty Member (22/10/2010 – April 2021)
  College of Engineering and Natural Sciences, Department of Computer Science.
- Classes on operating systems, probability and random variables (135 students), deep learning for natural language processing. (all remote)
- Research supervision of students on applications of machine and deep learning.

İzmir Institute of Technology, Izmir, TURKEY

- Faculty Member (April 2021-Present)
  Department of Electrical and Electronics Engineering.

Awards:

- College de France-Inria Fellowship. 1/3/2018-31/5/2019.
- David L. Cheriton Stanford Graduate Fellowship, 1/6/1998-31/12/2003.
- Ranked 1st in the Faculty of Engineering, Bilkent University, 15/6/1997.
- Full scholarship, Bilkent University, 1/10/1993-1/6/1997.
- Tubitak (Turkish National Science Foundation) fellowship, 1/10/1993-1/6/1997.
- Bronze medalist in International Olympiad of Informatics, Argentina, 1/10/1993.
- Ranked 16th out of 1,000,000 students in National University Entrance Exam, 1/6/1993.

Grants:

- Xilinx hardware donation for FPGAs
- Nvidia (2) Titan XP GPU grant. 15/09/2017.
- Testing NVR suite of programs with real NMR data. Tübitak-CNRS collaborative grant (Co-PI), 1/1/2013-1/1/2015.
- Automated NMR Structure-Based Assignments, European Union Marie Curie Reintegration Grant (PI), 1/9/2010-1/9/2013.
- Novel algorithms for NMR Structure-Based Assignments, Tubitak Research Grant (PI), 1/09/2009-30/08/2011.

Classes taught:
(5xx classes are graduate level, 1xx, 2xx,3xx and 4xx coded classes are undergraduate level classes.)

(at Izmir Institute of Technology)

- EE313 Analog Electronics
- EE502 Linear Dynamical Systems

(at Istanbul Medipol University)

- 3rd year CS students, Operating Systems
- 2nd year Engineering students, Probability and Random Variables
- 4th year and PhD level, Deep Learning and Natural Language Processing

(at Istanbul Sehir University)

- Life 102, Biology
- EECS201, System Design Fundamentals
- EECS202, Into to EECS II
- EECS213, UNIX Operating System
- CS371, Algorithms and Data Structures
- CS362, Artificial Intelligence

- CS314 Operating Systems
- EECS 491/492, Global Design Project
- EECS420/ECE520, Software Based Start-ups
- ECE516, Computational Biology
- ECE515, Linear Dynamical Systems
- EECS461/ECE523, Machine Learning
- EECS464/ECE524 Computer Vision
- EECS489/ECE589 Deep Learning for Natural Language Processing

(at Sabanci University)

- ENS 491/2, Graduation Project
- CS526, Motion Planning
- CS581, Algorithms for Computational Structural Biology
- Bio511, Advanced Bioinformatics

Journal Articles

1. A Saracoglu, H Ozen, MS Apaydin, A Maltas. A New Approach to Determine Traffic Peak Periods to Utilize in Transportation Planning. Arabian Journal for Science and Engineering, 1-10 (2021)
2. S. Çetinkaya, Ş.N. Ekren, M. S. Apaydin. Progress in Nuclear Vector Replacement for NMR Protein Structure Based Assignments. RAIRO Operations Research 50(2):341-349, 2016
3. M. Akhmedov, B. Çatay, M.S. Apaydin. Automating unambiguous NOE data usage in NVR for NMR protein structure-based assignments. J. Bioinform. Comput. Biol. 13(6), 2015
4. G. Çavuşlar, B. Çatay, M. S. Apaydin. A Tabu Search Approach for the NMR Protein Structure-Based Assignment Problem. IEEE Transactions on Computational Biology and Bioinformatics 9 (6): 1621-1628, 2012
5. M. S. Apaydin, B. Çatay, N. Patrick and B.R. Donald. NVR-BIP: Nuclear Vector Replacement using Binary Integer Programming for NMR Structure-Based Assignments. The Computer Journal 54 (5): 708-716, 2011
6. M. S. Apaydin, V. Conitzer, B.R. Donald. Structure-Based Protein NMR Assignments using Native Structural Ensembles. In Journal of Biomolecular NMR, 40(4):263-276, 2008
7. T.H. Chiang, M. S. Apaydin, D.L. Brutlag, D. Hsu, J.-C. Latombe. Using stochastic roadmap simulation to predict experimental quantities in protein folding kinetics: folding rates and phi-values. In Journal of Computational Biology 14(5):578-93, 2007
8. Apaydin, D.L. Brutlag, C. Guestrin, D.Hsu, J.-C.Latombe and C. Varma. Stochastic Roadmap Simulation: An efficient Representation and Algorithm for Analyzing Molecular Motion. In Journal of Computational Biology, 10 (3-4):257-281, 2003
9. Apaydin, C. Guestrin, C. Varma, D.L. Brutlag, and J.-C. Latombe. Studying Protein-Ligand Interactions with Stochastic Roadmap Simulation. In Bioinformatics, 18 Suppl. 2:S18-S26, 2002

Conference And Workshop Papers

1. B.Ciftci, M.S. Apaydin. A Deep Learning Approach to Sentiment Analysis in Turkish reviews dataset. International Conference on AI and Data Processing Conference, 2018.
2. U. C. Cakmak, M S. Apaydin and B. Catay. A Neural Network Approach for Predicting Speeds on Road Networks. Signal Processing Applications (SIU), 2018.
3. U.C. Cakmak, M. S. Apaydin and B. Catay. Traffic speed prediction with neural networks, Operations Research (OR) 2017 and Euro Working Group on Transportation Meeting (EWGT), 2017.
4. S. Cetinkaya and S. N. Ekren and M. S. Apaydin. Progress in Automated NMR Protein Structure-Based Assignments. European Conference for Operational Research, 2015.
5. S. N. Ekren and M. S. Apaydin. Incorporating Triple Resonance Experiment Data Into NVR for NMR Structure-Based Assignments. SIU, 2014.
6. C. Aslanov and B. Çatay and M. S. Apaydin. An ant colony optimization based approach for solving the NMR Structure-Based Assignment Problem. Genetic and Evolutionary Computation Conference (GECCO), 2013.
7. M. Akhmedov and B. Çatay and M. S. Apaydin. Distinguishing the type of NOE for NMR Protein Structure-Based Assignments. SIU, 2013.
8. H. Erdoğan and M. S. Apaydin. Incorporating HADAMAC experiment into NMR Structure-based assignments. Sixth International Symposium on Health Informatics and Bioinformatics (HIBIT), 2011.
9. H. Erdoğan and M. S. Apaydin. Using Amino Acid Typing to Improve the Accuracy of NMR Structure Based Assignments. HIBIT, 2010.

10. M. S. Apaydin, B. Çatay, N. Patrick and B.R. Donald. NVR-BIP: Nuclear Vector Replacement using Binary Integer Programming for NMR Structure-Based Assignments. In International Conference on Computer and Information Sciences (ISCIS), 2009.
11. T.H. Chiang, M. S. Apaydin, D.L. Brutlag, D. Hsu, and J.-C. Latombe. Predicting Experimental Quantities in Protein Folding Kinetics using Stochastic Roadmap Simulation. In Proceedings of the Tenth Annual International Conference on Research in Computational Molecular Biology (RECOMB), 2006.
12. M. S. Apaydin, D.L. Brutlag, C. Guestrin, D. Hsu and J.-C. Latombe. Stochastic Conformational Roadmaps for Computing Ensemble Properties of Molecular Motion. In Algorithmic Foundations of Robotics V (WAFR), 2002.
13. M. S. Apaydin, D.L. Brutlag, C. Guestrin, D. Hsu. and J.-C. Latombe. Stochastic Roadmap Simulation: An Efficient Representation and Algorithm for Analyzing Molecular Motion. In Proceedings of the Tenth Annual International Conference on Research in Computational Molecular Biology (RECOMB), 2002.
14. M. S. Apaydin, A.P. Singh, D.L. Brutlag, and J.-C. Latombe. Capturing Molecular Energy Landscapes with Probabilistic Conformational Roadmaps. In International Conference on Robotics and Automation (ICRA), 2001.
15. R. Beigel, N. Alon, , L. Fortnow and S. Kasif. An optimal procedure for gap closing in whole genome shotgun sequences. In Proceedings of the Fifth Annual International Conference on Research in Computational Molecular Biology (RECOMB), 2001.

Languages:

Turkish (native), English (fluent), French (fluent), German (basic).

M. Sc. Students supervised:

Format: Student Name, Dates, Keywords, Next position (if applicable).

@Şehir University:

- B. Çiftçi, 2017-2019, #Deep Learning, #Sentiment Analysis, #Turkish @Software engineer at TRT world
- S. Cetinkaya, 1/10/2013—30/8/2015, #NMR, #Structure-Based Assignments. @Software engineer at Turkish airlines

@Sabanci University (co-supervised with Prof. B. Catay):

- Umut Can Cakmak, 1/9/2015—30/8/2017, #Machine and Deep Learning, #Traffic speed prediction, Ph.D. Student @ Erasmus University, Netherlands.

- M. Akhmedov, 1/9/2011—30/8/2013, #NMR, #Structure-Based Assignments, PhD Student at University of Lugano, Switzerland

- G. Cavuşlar, 1/9/2009—30/8/2011, #NMR, #Tabu Search, PhD Student at University of Wisconsin-Madison, USA.