# Ata TURK

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CONTACT
INFORMATION

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EXPERTISE

I am an applied computer scientist and cloud architect with a PhD in cloud systems and experience in building systems and solving deep technical challenges. I work on the design/development of scalable cloud-based platforms and improving the performance, security, efficiency of distributed frameworks. I enjoy the privilege of working with a worldwide team of researchers and developers while building and delivering public (Mass Open Cloud) and private (State Street) cloud infrastructures using agile methodologies and DevOps practices. I co-teach a graduate level cloud computing course at Boston University that provides an understanding of key cloud computing and big data concepts and teaches agile development. I also have extensive expertise in designing algorithms for graph analytics. My academic work in systems and combinatorics has been published in prestigious journals and conferences such as USENIX, TKDE, TPDS, SIGIR, WWW, ICDM, and SoCC.

PROFESSIONAL
EXPERIENCE

**State Street Corporation**, Boston, MA

*VP of Cloud Architecture*                    **December 2018 -**

- Cloud and Infra Architect
  * Architected and leading the team that is developing the enterprise-wide observability (monitoring, alerting) solution for all of the State Street and it's subs and affiliates (An architecture spanning ~100 datacenters and multiple puplic clouds) (Using Splunk and Dynatrace).
  * Architected, deployed, and operatioanlizing the enterprise AI as a service solution for State Street (Using Datarobot).
  * Designed and leading the development of the next generation CI/CD pipeline for State Street API development and deployment (Using Github Actions and Tekton).
  * Designed, procured, installed on private DCs, and operationalized the on-prem Object Store (S3) solution for State Street (Using IBM Cloud Object Store).
  * Architected, deployed, and operationalized the enterprise API gateway solution for State Street (Using Google Apigee).
  * Scaled the internal Confluence and Jira deployments to ensure HA, transitioned the internal Artifactory to store artifacts in S3.
  * Led (acted as a co-team-lead) the development of the monitoring infrastructure for the multi-region State Street private cloud (Using Elasticsearch, Promotheus, Docker, Ansible, Terraform, Vault, Jenkins).

**Massachusetts Open Cloud Initiative (MOC)** and **BU ECE Dept.**, Boston, MA

*Research Scientist*                    **November 2014 - December 2018**

- Research scientist in BU ECE Dept. working on the Massachusetts Open Cloud (MOC) project, leading the monitoring, bigdata and cloud healthcare efforts.
  * Developed an end-to-end framework for healthcare application (Using OpenShift on top of OpenStack).

* Built a cloud-based multi-party computation framework for secure aggregate analytics over datasets owned by multiple non-trusting entities (Using OpenShift and OpenStack).
* Architected, implemented, deployed the MOC monitoring infrastructure and utilized it to detect application anomalies and system breaches (Using ElasticSearch, InfluxDB).
* Designed and implemented generic bare-metal provisioning solutions and applied them for rapid deployment of bare-metal big-data platforms on-demand.
- Instructor to the Cloud Computing course (since 2015) jointly thought in Boston University and Northeastern University
  * Designed and teaching a project-oriented course with strong industry involvement.

**Yahoo! Research, Barcelona**, Catalonia, Spain

*Postdoctoral Researcher*                                **June 2013 - November 2014**
- Member in Web Retrieval & Personalization Team, worked on
  * Designed the entity suggestion mechanisms for Yahoo! Search (Using Pig, Hadoop).
  * Built user profiles for Yahoo News users for news ordering (Using Pig, Hadoop).
  * Designed sentiment and impact analysis tools for commercial entities on Social Media (e.g. Tumblr) (Using Storm, Solr).
  * Designed Web frontier ranking systems for crawling higher quality content (Using Pig, Hadoop).

**Bilkent University Comp. Eng. Dept.**, Turkey

*Postdoctoral Researcher*                                **Sep 2012 - June 2013**
- Coordinator/researcher in EU-funded HPC projects

**T2 Software**, Turkey

*Consultant*                                **Sep 2012 - June 2013**
- Consultant for Turkish National Science Foundation (TUBITAK) funded project for Online Sentiment Analysis of Turkish Social Media (Using AWS Kinesis)

**Bor Software LLC**, Ankara, TURKEY

*Founder & managing partner*                                **June 2007 - Sep 2010**
- Developed CMS for government organizations, video analytics solutions, GIS solutions for electricity distribution networks, developed and managed notable editorial websites such as the Good Magazine www.good.is
- Employed more than 15 workers, shares sold to Natek Bilisim LLC in 2011

EDUCATION     **Bilkent University**, Bilkent, Ankara TURKEY

Ph.D., Computer Engineering, 2012, Thesis Topic: *Utilizing Query Logs for Data Replication and Placement in Big Data Applications*

M.S., Computer Engineering, 2004

B.S., Computer Engineering, 2002

**REFERENCES AVAILABLE TO CONTACT**

**Fadi Gebara**
- Director at Facebook,
- ★ *Fadi was the senior technology executive leading State Streets digital transformation to a private cloud for which I worked on building operational visibility solutions.*

**Prof. Orran Krieger**
- Professor (BU ECE & CS), BU Electrical and Computer Engineering, Computer Science, and BU Cloud Computing Initiative (CCI)
- ★ *Prof. Krieger is the PI of the Mass. Open Cloud where I led various teams and he was also one of my postdoc advisors.*

**Prof. Ayse K. Coskun**
- Assoc. Professor (BU ECE), BU Electrical and Computer Engineering,
- ★ *Prof. Coskun was one of my postdoc advisors in Boston University*

**Dr. Berkant Barla Cambazoglu**
- Senior Researcher, RMIT University, Melbourne, Australia
- ★ *Dr. Cambazoglu was my manager in Yahoo! Research, Barcelona*

**Dr. Cevdet Aykanat**
- Professor, Bilkent University, Ankara, Turkey
- ★ *Dr. Aykanat was my PhD Advisor*


**TECHNOLOGY SMARTS**
- OpenStack, OpenShift, Kubernetes, Docker
- ElasticStack, Splunk, Prometheus
- Ansible, Terraform, Jenkins, Githib Actions, OpenShift Actions, HashiCorp Vault, Vagrant
- AWS EC2, AWS EMR, AWS S3, AWS Kinesis, AWS EKS, GCE, GKE, Anthos
- Hadoop, PIG, Hive, Storm, Spark
- IBM Cloud Object Store
- Google Apigee
- Datarobot
- Jira, Confluence

SELECTED
PUBLICATIONS

M. Abdi, A, Mosayyebzadeh, M.H. Hajkazemi, E.U. Kaynar, **A. Turk**, L. Rudolph, O. Krieger, P. Desnoyers, "A Community Cache with Complete Information", in Usenix FAST'2021.

A. Mohan, S. Nadgowda, B. Pipaliya, S. Varma, S. Suneja, C. Isci, G. Cooperman, P. Desnoyers, O. Krieger, **A. Turk**, "Towards Non-Intrusive Software Introspection and Beyond", in IEEE IC2E'2020.

A. Byrne, E. Ates, **A. Turk**, V. Pchelin, S. S. Duri, S. Nadgowda, C. Isci, A. Coskun, "Praxi: Cloud Software Discovery That Learns From Practice", in IEEE Transactions on Cloud Computing, 2020.

E. U. Kaynar, M. Abdi, M. H. Hajkazemi, **A. Turk**, R. R. Sambasivan, D. Cohen, L. Rudolph, P. Desnoyers, O. Krieger, "D3N: A multi-layer cache for the rest of us", in IEEE BigData'2019.

**A. Turk**, D. Turkoglu, "Revisiting Wedge Sampling for Triangle Counting", in WWW'2019.

A. Mohan, **A. Turk**, R. S. Gudimetla, S. Tikale, J. Hennesey, U. Kaynar, G. Cooperman, P. Desnoyers, and O. Krieger, *"M2: Malleable Metal as a Service"*, in IC2E'2018.

D. Turkoglu, **A. Turk**, "Edge-Based Wedge Sampling to Estimate Triangle Counts in Very Large Graphs", in ICDM'2017.

R. Pienaar, **A. Turk**, J. Bernal-Rusiel, N. Rannou, D. Haehn, P. E. Grant and . Krieger, "CHIPS: A Service for Collecting, Organizing, Processing, and Sharing Medical Image Data in the Cloud", in VLDB-DMAH'2017.

O. Tuncer, E. Ates, Y. Zhang, **A. Turk**, J. Brandt, V. J. Leung, M. Egele, and A. K. Coskun, "Diagnosing Performance Variations in HPC Applications Using Machine Learning", in ISC-HPC'2017. (Gauss Award Winner)

**A. Turk**, M. Varia, G. Kellaris, "Revealing the unseen: how to expose cloud usage while protecting user privacy" in ICDMW'2017.

**A. Turk**, H. Chen, A. Byrne, J. Knollmeyer, S. Duri, C. Isci, and A. K. Coskun "DeltaSherlock: Identifying Changes in the Cloud", in IEEE BigData'16.

J. Hennessey, S. Tikale, **A. Turk**, E. Kaynar, C. Hill, P. Desnoyers, O. Krieger, "HIL: Designing an Exokernel for the Data Center", in SoCC'16.

**A. Turk**, R.S. Gudimetla, E. U. Kaynar, J. Hennessey, S. Tikale, P. Desnoyers, O. Krieger, "An experiment on Bare-Metal BigData Provisioning", in HotCloud 16.

**A. Turk**, H. Chen, O. Tuncer, H. Li, Q. Li, O. Krieger, A. K. Coskun, "Seeing into a Public Cloud: Monitoring the Massachusetts Open Cloud", in CoolDC 16.

M. Zapater, **A. Turk**, J. M. Moya, J. L. Ayala, A. K. Coskun, "Dynamic Workload and Cooling Management in High-Efficiency Data Centers", in IGSC'15.

G. B. Tran, **A. Turk**, B. B. Cambazoglu, "A Random Walk Model for Optimization of Search Impact in Web Frontier Ranking", in ACM SIGIR'15.

**A. Turk**, O. R. Selvitopi, C. Aykanat, H. Ferhatosmanoglu, *"Temporal Workload-Aware Replicated Partitioning for Social Networks"*. IEEE TKDE'14.

**A. Turk**, K. Y. Oktay, C. Aykanat, *"Query-Log Aware Replicated Declustering"*, IEEE TPDS'2012.

O. R. Selvitopi, **A. Turk**, C. Aykanat, *"Replicated Partitioning for Undirected Hypergraphs"*, JPDC'2012.

A. Cevahir, C. Aykanat, **A. Turk**, B. B. Cambazoglu, *"Site-Based Partitioning and Repartitioning Techniques for Parallel PageRank Computation"*, IEEE TPDS'2011.