# CANTURK ISCI

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EXPERIENCE

**State Street Technology Research**, New York, NY

*Managing Director, Distinguished Engineer* in *Advanced Cloud Infrastructure*  2018 - 2020

- Member of leadership team that led State Street Cloud Transformation Strategy and delivered a new cloud service, spanning 4 regions, 1000+ nodes, 100K+ instances, addressing key challenges for compliance, security, availability, automation and agility.
- Built Cloud Operational Visibility team and service delivery roadmap from ground up.
- Led distributed engineering teams that delivered the operational visibility services stack, including logging, monitoring, audit, bill of materials, drift, alerting, DevOps validation, compliance and security.
- Worked with several business lines for cloud transformation and service adoption/integration.
- These services were used by cloud teams and adopted by business lines for operations, security, audit, DevOps and site reliability, tracking billions of events across regions daily.

**IBM T.J. Watson Research Center**, Yorktown Heights, NY

*Manager, Principal Researcher* in *Cloud Monitoring, Security and Analytics*  2012 - 2018

- Led worldwide research and development teams to deliver novel operational visibility and security analytics solutions for cloud.
- Worked with external clients on cloud onboarding, service integration, technology requirements and gaps, security, compliance and operational analytics.
- These solutions were deployed in public and private cloud services around the world, serving a large number of high-profile customers.
- Built-in Cloud Monitoring: Delivered the *Built-in Cloud Monitoring* service for IBM Cloud, based on a novel deep introspection technology for containers and VMs. This service is used at scale in IBM Public Cloud across all geographies by thousands of clients. Built-in Monitoring has been highlighted in IBM press releases, tech news and in industry forums by top executives as a key differentiator.
- Security Analytics and Vulnerability Advisor: Led the worldwide Operational Analytics squad that delivered the highly-popular *Vulnerability Advisor* security and compliance service in IBM Cloud. Vulnerability Advisor runs in all IBM Public Cloud locations and has scanned millions of instances. It is also a key component of IBM Cloud Private Kubernetes offering. Vulnerability Advisor has been prominently highlighted in IBM press releases, tech news, industry forums and top executive keynotes.
- Agentless VM Monitoring: Designed a novel VM monitoring technology based on introspection. This is integrated in IBM Virtual Image Library, IBM Cloud and Watson.
- Cloud Security Event Monitoring: Developed a near-realtime, out-of-band security information and event monitoring for VMs. This was integrated with QRadar SIEM solution.

*Research Staff Member* in *Virtualization and Data Center Energy Management*  2008 - 2012

- VM Demand Estimation: Developed an accurate resource accounting and demand prediction solution virtual machines. This solution is deployed in IBM VMControl, PureApp Systems and OpenStack.
- Agile Power Management: Implemented a new power management stack across hardware, firmware, OS and virtualization middleware that was deployed in enterprise servers and large-scale data centers.
- Data Center Robot: Designed autonomic data center robots for thermal monitoring and asset tracking. These robots were deployed in data centers in four continents as an IBM Industry Solutions offering.

**VMware Inc.,** Palo Alto, CA

*Senior Member of Technical Staff* in *Performance R&D*  2007 - 2008

- VirtualCenter Performance and Scalability: Delivered key performance features for vCenter, Distributed Resource Scheduling (DRS) and Distributed Power Management (DPM).
- Developed distributed resource management policies for VirtualCenter and ESX hypervisor.

EDUCATION

**PhD/MA  Princeton University**, Princeton, NJ
Computer Engineering (*Princeton Graduate Fellow*)

**MS  University of Westminster**, London, UK
Computer Systems (*British Council Millennium Scholar, Graduated with Distinction*)

**BS  Bilkent University**, Ankara, Turkey
Electrical Engineering (*Bilkent Undergraduate Fellow, Graduated with High Honors*)

| PUBLICATIONS | 50+ publications with 4000+ citations on cloud, virtualization, containers, operational visibility, security, analytics, computer architecture, energy management, data centers, robotics and sensing. Electronic copies available at: `http://www.canturkisci.com/pubs` | |
|---|---|---|

(Scholar: `http://is.gd/pubs_scholar` | DBLP: `http://is.gd/pubs_dblp`)

| PATENTS | 70+ issued or pending patents with Intel, VMware and IBM. |
|---|---|

(Issued: `http://is.gd/uspto` | Pending: `http://is.gd/uspto_pending`)

| EXTERNAL ACTIVITY | | |
|---|---|---|
| ▪ Adjunct Faculty, *Princeton University, Dept. of Computer Science* | 2017 - 2018 |
| ▪ Open Source Technical Lead, *DeveloperWorks* | 2015 - 2018 |
| ▪ Open Collaborative Research Lead *with Carnegie Mellon, Univ. of Toronto, Boston Univ.* | 2014 - 2018 |
| ▪ Program chair, editor, committee member *for 30+ conferences, journals and NSF panels* | 2009 - 2019 |
| ▪ Mentored PhD Theses, joint research and internships *for 20+ researchers and engineers* | 2008 - 2019 |
| ▪ Numerous press features, blogs, talks, podcasts *on tech, industry and academic forums* | 2008 - 2019 |

| AWARDS | | |
|---|---|---|
| **Master Inventor,** *IBM* | 2015 |
| **Open Source Impact Award**, *Agentless System Crawler*, DeveloperWorks | 2015 |

**High Value Patent Awards**
- *Passive Monitoring of Virtual Systems Using Agentless Near-Realtime Indexing* — 2016
- *Managing Companionship Data* — 2014
- *Discovery and Monitoring of an Environment Using a Plurality of Robots* — 2014
- *Virtualization and Dynamic Resource Allocation Aware Storage Level Reordering* — 2012

**Best Paper Awards**
- *Security Analysis of Container Images using Cloud Analytics Framework,* ICWS — 2018
- *Agentless Cloud-wide Streaming of Guest File System Updates,* IEEE IC2E — 2014
- *Towards Data Center Self-Diagnosis Using a Mobile Robot,* IEEE ICAC — 2011
- *Predicting VM Behavior for DRS & DPM Cost/Benefit Analysis,* VMWorld — 2008

**Key Corporate Awards**
- *Leadership for IBM Vulnerability Advisor Service* — 2018
- *Contributions to IBM Virtual Image Library, IBM Cloud Orchestrator* — 2016
- *Key Research Contributions to Data Center Energy and Resource Management* — 2015
- *Pioneering Contributions to VM Image Analytics* — 2015

| TECHNOLOGIES | | |
|---|---|
| Develop: | Python, Java, C/C++, Matlab, Perl, Shell |
| Test/Deploy: | Docker, TravisCI, Jenkins, Ansible, Terraform |
| Run: | Kubernetes, Openstack, Qemu/KVM, VMware |
| Manage: | Elastic Stack, Prometheus/Grafana, Kafka |
| Collaborate: | Github/Zenhub, Jira/Trello/Confluence |
| Verify: | Vulnerability Advisor, CIS, OpenScap |