Mehmet Savasci

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EDUCATION

University of Massachusetts (UMass) Amherst, Amherst, MA

PhD, Computer Science   Graduation Date: December 2023

University of Rhode Island, Kingston, RI

Master of Science, Electrical Engineering   2019
GPA: 3.17/4.0
> Final Project Title: Implementation of Cloud Storage System based on Erasure Coding

Erciyes University, Kayseri, Türkiye

Bachelor's Degree, Computer Engineering   2015
GPA: 3.39/4.0
> Final Project Title: Real-time Object Detection Application

RESEARCH INTERESTS

- Cloud Computing, Applied Control Theory, Distributed Systems, Datacenters, Application Profiling, Auto Scaling.

RESEARCH EXPERIENCE

Adaptive Management of Power-Performance Tradeoffs in Cloud Data Centers

PhD Research, University of Massachusetts Amherst   Aug 2020 –

- Built controllers that are capable of managing the power-performance tradeoffs in web server clusters.
- Used autoscaling techniques such as vertical scaling to change application performance based on load and performance requirements.
- Automated resource management of deployed applications considering power-performance tradeoffs.
- Accepted to TheWebConf '23 conference (see Publications section).

Latency analysis of (2,1) and (4,2) MDS coding techniques used in datacenters to keep data secure from server failures in terms of partial update operation

Master's Thesis Project, University of Rhode Island   Jan 2018 – May 2019

- Done latency analysis of two coding methods both theoretically and practically.
- Used Poisson process to model partial update requests. Exponential distribution was selected to model download and upload times. The Markov chain was a good model to show queue length pattern. Joining the shortest queue load balancing schema was picked as a load balancing method. All of them were for theoretical analysis.
- Used Amazon AWS S3 Java API for practical analysis. For practical analysis, download, upload, and partial update speed for (2,1) and (4,2) MDS coding techniques are measured.

Real time color analysis and fault detection of wet sugar which is under centrifuge
Master's Research Project, Erciyes University   Oct 2015 – Apr 2017
- Captured wet sugar from production line in Kayseri Seker factory using Basler camera. Used Pylon C++ API to develop program to obtain images of wet sugar.
- Converted images into CIELAB color space.
- Performed statistical operations such as mean,variance, min, and max for each L, a, and b band of images. Curve fitting operation was done using these calculated values and sugar lab results.
- Used Qt framework to design user interface.
- Selected region of interest (ROI) of the sugar by operator before quality analysis starts. Then, for each video frame, selected ROI region was analyzed and the quality of sugar measured in real-time.

Real-time object detection application with OpenCV
Bachelor's Degree Final Project, Erciyes University   Feb 2015 – Jun 2015
- Stored object images prior to running program.
- Processed video frames in real-time. If the object is detected, the user was notified.
- Detected only one object per frame. There was no multiple object detection feature.
- Used SURF detector and decriptor to detect object. Used OpenCV library with C++.

Pharmacy scheduler, *Erciyes University*   Oct 2013 – Oct 2014
- Included two parts: pharmacy scheduler application and user interface.
- Developed a scheduler using a Java framework provided by BFC Bilisim.
- Used Android SDK to list Pharmacy on duty to the user.
- Collaborated with BFC Bilisim for market research and marketing.

WORK EXPERIENCE

IT Department, Meliksah University   Kayseri, Türkiye
Part-time   Aug 2014 – Apr 2015
- Developed online trainee registration system using ASP.NET and Microsoft SQL Server DMS.
- Built page components using Telerik UI components.
- Provided technical support to students.
- Modified previously developed Bologna Process website using C#.

R&D Department, TUBITAK National Observatory   Antalya, Türkiye
Summer Intern   Aug 2014 – Sept 2014
- Worked on inventory web application with JSF framework and MySQL database management system. Performed research regarding Hibernate ORM.

IT Department, TUBITAK National Metrology Institute   Kocaeli, Türkiye
Summer Intern   Jun 2013 – Jul 2013
- Developed desktop application with Java programming language using client/server architecture. Carried out research about server, client, IP, and port.

Learner, Iltelis Advanced Technology   Kayseri, Türkiye
Summer Intern   Jun 2012 – Aug 2012

- Learned C# and SQL DMS. Developed many desktop applications from basic to advanced with C# programming language and Microsoft SQL Server DMS.

TEACHING EXPERIENCE

Computer Science, UMass Amherst

Course: Distributed and Operating Systems (TA)   Spring 23 (In progress)

Course: Using Data Structures (Course Instructor/TO)   Fall 22

Course: Teaching Assistants as Tomorrow's Faculty (TA)   Fall 21

Course: Using Data Structures (TA)   Fall 19, Spring 20, Fall 20, Spring 21, Spring 22

AWARDS

Graduate Research Fellowship, Türkiye's Ministry of Industry and Technology   Feb 2016

Postgraduate Scholarship, Türkiye's Ministry of National Education   Oct 2015

High Honors Degree, Erciyes University   Jun 2015, Jan 2015, Jan 2013

Honors Degree, Erciyes University   Jun 2014, Jan 2014, Jun 2012

Scholarship, Türkiye's Ministry of National Education   Aug 2007

PUBLICATIONS

Mehmet Savasci, Ahmed Ali-Eldin, Johan Eker, Anders Robertsson, and Prashant Shenoy. "DDPC: Automated Data-Driven Power-Performance Controller Design on-the-fly for Latency-sensitive Web Services". *In Proceedings of the Web Conference, Austin, TX May 2023.*

TECHNICAL SKILLS

- Programming Languages: Java, Python, Solidity, JavaScript, SQL, C#, C++, C, MATLAB
- DevOps: Docker, LXC, KVM, Terraform
- Operating System: Windows, Linux, Mac OSX
- API: OpenGL, Amazon AWS S3 Java/Python API

CERTIFICATIONS

- University of Rhode Island Embedded Systems Certificate   Jul 2018
- Indiana University Bloomington (Bloomington, IN)   Jul 2017
  188 hours English education (05/08/2017 – 07/28/2017)
- Middle East Technical University (Ankara, Türkiye)   Jan 2017
  1,200 hours English education (01/04/2016 – 01/13/2017)

EXTRACURRICULAR ACTIVITIES

- President of the Graduate Muslim Student Association at UMass   May 2021-Present

- Media coordinator of the ACM Club at the Erciyes University   2012-2013