Cemre Mengü

Istanbul, Turkey

cemremengu@gmail.com

Personal Information

Date of Birth: 27/02/1990
Place of Birth: Nicosia, Cyprus
Citizenship: Republic of Turkey, Republic of Cyprus
Marital Status: Married
Social: `http://linkedin.com/in/cmengu` • `http://github.com/cemremengu`

Education

- **Imperial College London** · London, UK · 2012
  M.Sc. Advanced Computing
  Grade: **Merit**

  Related Courses:

  Advanced Topics in Software Engineering · Advanced Issues in Object-Oriented Programming · Advanced Databases & Network Security · Models of Concurrent Computation · Parallel Algorithms · Multi-agent Systems · Distributed Algorithms · Computational Finance

  Thesis Project:

  My topic was about dynamic test case generation tools, which executed a given program *symbolically* and then solved complex constraint-sets (an NP-complete problem) to generate test cases. I improved **Klee**, a C++ based open source dynamic test generation tool for C programs, with various heuristics such as range analysis and constraint-set reduction to increase both the run-time performance and the number of test cases produced.

  Selected Projects:

  – Worked together with a four person team on a legacy codebase written in Java to extend its functionality by adding a new algorithm and making it possible to switch between old/new algorithms using the "strategy" design pattern. During the project a test-driven development methodology was embraced and extensive unit-testing (JUnit), acceptance testing (Fit) and mock objects (jMock) were used. Code coverage was also measured and an Ant script was written to automatize the whole build and test process. An SVN repository was used to maintain the code during the project.

- **The University of Texas at Austin** · Austin, TX, U.S.A. · 2011
  B.Sc. (Hons) Computer Science
  Grade: **3.73/4.00**

  Related Courses:

  Software Engineering · Object-Oriented Programming · Software Design · Algorithms & Data Structures · Computer Networks · Introduction to Operating Systems · Computer Systems Architecture · Probability I · Introduction to Mathematical Statistics · Introduction to Microeconomics

  Selected Projects:

  – Worked together with a five person team to develop a website that served as an online database for information on various world crises and allowed users with administrator access to add their own entries by submitting XML documents. While Google App Engine served both as the database and the web server for the page, Python with Django templates were used to dynamically create pages. JavaScript, HTML, CSS, and Lightbox were also used when implementing the user interface. A Git repository was used to maintain the codebase. At the end of the project, a technical report and presentation was done.

– Developed a text-based client-server connect four game in Python that employed multiple threads and communication over a network

– Extended an experimental programming language to have type inference together with a three-person team using JavaCC and Java. Worked both as a programmer and the team leader who managed the workflow

– Developed a user-level thread package and an atomic disk that used a circular log and transactions

Work Experience

- ***Software Engineer*** · **TTG International** (October 2012-Present)

  Projects

  - **GEMS (Generic Element Management System)**

    Overview & Tasks

    GEMS, currently used by Turk Telekom, is a system for discovering and monitoring all kinds of infrastructure in an environment by using either pull (ping, snmp, rest api etc.) or push (agent, trap, syslog etc.) based approaches.

    Key aspects

    Docker | Java 11 (Spring Boot) | Go | Redis | PostreSQL | Kafka | NiFi

  - **SYNERGY**

    Overview & Tasks

    SYNERGY, currently used by Turkcell, is a system for monitoring energy related equipment such rectifiers, generators and free cooling located in base stations. In addition to monitoring, the system is also responsible for configuring devices remotely and create alerts based on various decision algorithms such as predictive maintenance.

    Key aspects

    Docker | Java 11 (Spring Boot) | Go | Oracle | NATS | MongoDB | SNMP | Modbus

  - **MCKS/CEIR (Central Equipment Identity Register)**

    Overview & Tasks

    MCKS/CEIR is a software system consisting of many different modules to keep track of (mobile) equipment identities for regulatory purposes. It is currently used in Cyprus by BTHK (Information Technologies and Communication Authority).

    Key aspects

    Windows | C# | Rest API | Oracle | AngularJS | Git

  - **ABID (Mobile Network Anomaly Detection)**

    Overview & Tasks

    ABID is used by Vodafone Turkey to detect anomalies in their mobile (GSM, UMTS, LTE) network for various KPIs using advanced machine learning algorithms to process millions data from around 300K network equipments every hour.

    Key aspects

    C# | Rest API | Oracle | React | PL/SQL | Git | RabbitMQ

  - **TIPS (Transmission Inventory & Planning)**

    Overview & Tasks

    TIPS is a C#- WinForms based software being developed for Avea to plan and manage their transmission inventory which, currently, is carried out using spreadsheets. I am mainly responsible for managing and developing the modules related to various SDH equipments. I am involved in every part of the iteration cycle ranging from gathering requirements and

network data from the engineers at Turk Telekom to front/back-end design, development and testing of the modules.

Key aspects

Windows | C# | WinForms | Python | Oracle 11g | PL/SQL | NHibernate | Git | DevExpress | Ninject | XenApp

- **Net-Trans (Leased Line Inventory Management)**

  Overview & Tasks

  Net-Trans is a C#- WinForms based software currently used both by Avea and Vodafone Turkey to manage their leased line inventory. I was responsible for designing and implementing a financial planning module from scratch that will keep track of millions of Turkish Liras each year.

  Key aspects

  Windows | C# | WinForms | Oracle | PL/SQL | LLBLGen | Git | DevExpress

- **SxQM (Quality of Service Monitoring)**

  Overview & Tasks

  The SxQM project was based on getting various KPIs from a subscriber's (smart) phone such as signal/battery levels and incoming calls combined with location information to measure subscriber experience. I worked on the agent apps for Blackberry, Android and iOS platforms which gathered and sent the necessary KPIs periodically to a CherryPy server to be loaded to the database using an SQL*Loader script.

  Key aspects

  Android | BlackBerry OS | iOS | Java SE | Python | Objective-C | Oracle | PL/SQL | SQL*Loader | CherryPy | Git

- ***Research Assistant*** · **The University of Texas at Austin** (2010-2011)

  Tasks

  – Evaluated the performance of SATe (a biological software package to infer DNA/RNA sequence alignment and phylogenetic tree simultaneously) with large simulated amino acid data sets using Condor (a specialized workload management system for High Throughput Computing) and Perl/Python scripts
  – Designed and implemented a Python script that used Condor and DAGMan (Directed Acyclic Graph Manager) to evaluate and compare the performance of various DNA alignment software.

- ***Software Engineering Intern*** · **Cyprus Investment Development Agency** (Summer 2009)

  Tasks

  – Designed and implemented a web application on a LAMP (Linux, Apache, MySQL, PHP) server for comparing various aspects of Cyprus to other countries.

Skills

- Languages: **Java 11+ (Spring Boot)** · **Go** · **Rust** · **C#**· **Python** · **JavaScript** · **SQL** · **React** · **C/C++**
- Database: **PostgreSQL** · **MongoDB** · **Oracle**
- Version Control: **Git** · **SVN**
- Proficient in development on platforms: **Windows** · **Linux** · **Mac OS X**
- Other: **Networks** · **Telecom Technology** · **SNMP** · **LaTeX**

Honors and Awards

- Honored with the prestigious CASP Undergraduate Scholarship from the Cyprus Fulbright Commission
- Received European Union Educational Scholarship
- Included in the Dean's List of Distinguished Students for 3 semesters and awarded with honors for academic excellence for 5 semesters (out of 8 semesters) at The University of Texas at Austin

Workshops/Training

- Google Associate Product Manager (invitation only) workshop
- Oracle Database SQL and PL/SQL Fundamentals Training
- Seeds of Peace Conflict Resolution Program in Maine, U.S.A.
- Conflict Resolution Workshop in Vermont, U.S.A.

Activities & Interests

- Table Tennis (I played professionally between 1998-2008 and was a part of the national team several times)
- UT-Association for Computing Machinery
- Technology