Sina Kashipazha

Personal Data

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Education

B.Sc In Computer Engineering with Concentration in Software — **Tehran, Iran**
University of Tehran — 2012 - 2017

Professional Experience

- **Syntech Research Center**
  - Parax Electric Car — Nov 2018 - present
    Lead Software Engineer, designe and implementation of cloud system which:
    - Receive bulk of encrypted data from cars
    - Load balance received data between multiple cache container
    - Use Reinforcment Learning to select next cache for data extractation
    - Show cars data to end user in real-time
    - Use microservices architecture to implement above services

- **University of Tehran**
  - Computer Network Lab — Jan 2017 - Jan 2019
    Technical Staff, Network protocols, Router and MM-Wave Characterization
    - Hands on Experience in using Router, Switch and SDN enabled equipments.
    - Hands on Experience in using floodlight SDN controller and mininet.
    - Develope instructions for computer network lab.
    - Designe and implemention of vanet simulation tool set to compare various cache placement policies and learning alghorithms.
    - Designing fuzzy SDN controller that balanced load between switch using fuzzy logic.
    - Dockerized hadoop and assess various task placement policies in regard to network.
  - The Institute for Research in Fundamental Sciences (website) — July - Sep 2018
    Technical Staff, Designe and implemention of:
    - a cloud based solution to run simulaotions remotely using Anaconda, JupyterLab and Docker.
    - a educational modules for computer network lab course.
    - a Markov chain, Monte Carlo, and multi-armed bandit Reinforcement Learning alghorithms.

Field of Interest

- Distributing switch flow between multiple controller in SDN networks
- File Placement in Distributed File Systems using Online Alghorithms

- Task Scheduling Policies in Cluster Computing
- Load Balance Application Layer Traffic using Layer Three Switch
- Content Distribution in Vehicular Social Networks
- Cloud Orchestration

Technicals Skills

- **Network skills:**
  - **Expert:** Mininet, Floodlight Controller, Scapy
  - **Proficent:** Openflow protocol, SDN network
  - **Familiar:** GNS3 network simulator, Pox, MPLS, Segment Routing, Cisco switch
- **Cloud skills:**
  - **Proficent:** Docker, Docker-compose
  - **Fluent:** Hadoop
  - **Familiar:** Openstack, Ansible, Kubernetees
- **Frameworks and tools:**
  - **Expert:** Play Framework, Maven, Git
  - **Proficent:** Hibernate, Anaconda, Jupyterlab, Python data analysis libraries: NumPy, SciPy, Pandas, Matplotlib
  - **Familiar:** Spark, Node.js, HTML5, CSS
- **Programming languages:**
  - **Expert:** Java
  - **Proficent:** Python, C, JavaScript

Research Experience

- **University of Tehran**
  - **Computer Network Labratory** Feb 2015 - Feb 2018
    Advisor: Prof. Ahmad Khonsari
    - **Thesis:** Reduction of Request Response in Hadoop Framework in regard to Network
    - **Thesis:** Update SDN Switch Routing table in response to Topology Change
    - **Thesis:** Cloud Based Copmuter Network Lab
- **Publications**
  - **Social-aware Mobile Road Side Unit for Content Distribution in Vehicular Social Networks** [abstract]

Extracurricular Activity

- **Teaching**
  - **Computer Network Lab** (Fall, Spring) Jan 2017 - Jan 2019
- **Teaching Assistant (Graduate)**
  - **Advanced Computer network** (Fall) **EXCEPT: Fall 2017** Sep 2016 - Jan 2019
- **Teaching Assistant (Undergraduate)**
  - **Computer Network** (Fall, Spring) Jan 2016 - Jan 2019
  - **Operating System and Operating System Lab** (Fall,Spring) **EXCEPT: Fall 2016** Jan 2015 - Jun 2018
  - **Design and Implementation of Compiler** (Fall), Sep 2015 - Jan 2016
  - **Formal Languages and Automata** (Fall) Sep 2014 - Jan 2015

Selected Projects

- Freelancer:
  - **Trip Assistant:** Telegram bot who List Airlines, Trains, buses, and Hotels available seats (or rooms) from multiple sources.

- **Instagram Follower:** Following, Unfollowing users automatically in order to gather follower.
- **Java class loader:** Modifing Java Class loader to load classes from encrypted jars at runtime.
- **Run Encrypted Executable:** Decrypt byte code in memery, make it executable and run it frome there using pure C and Linux Kernel System Calls.

- Hobby:
  - **Quote manager:** Cloud system to store my favorite verse, quote, book info, and summary.
  - **Tiny Controller:** Implementatin of sub ???? Openflow Controller
  - **Digistyle:** Write Javascript code to find lowest price clothe on Digistyle site.
  - **TextBook RSA:** Simple asymmetric encryption algorithm implementation.

- Course projects :
  - **Smart parking:**
    In Internet engineering course we devided into groups and each group defined IoT project for himself. We choose Smart parking which shows Parking lot status to users (Empty, Available, or Reserved). In first phase of project we detect car with Ultrasonic and send it through Bluetooth to Android app (Used arduino nano to connect bluetooth and Ultrasonic modules). In second phase we used nodeMCU modules to connect Ultrasonic through Wifi to server and show car status online. In last phase we connected mobile app to server.
  - **TCP over UDP:** **Computer Network Course**
    Implement portion of TCP protocol over UDP socket with features like Gurantee data integrity, Congestion Control, and Connection using Java programming language.
  - **Http Proxy:** Cache GET method of users http requests in order to reduce response time.
    Computer Network Course
  - todo **Nat,Pat, load balancer floodlight**
    Computer Network Lab
  - **Hardware Design:** Implement portion of Mips CPU's instruction set using Verilog Language and FPGA.
    Computer Architecture Lab
  - **Micro Bluetooth:** Control Step motor with Android App through bluetooth.
    Microprocessor Course
  - **System Call:** Add System Call to Linux OS to List process PIDs.
    Operating System Course
  - **Steganography:** Concealing a low resolution picture in high resolution picture using MATLAB.
    Signal ans Systems Course