Ali Gholami

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Summary of Qualifications

- Highly skilled Computer Scientist with 3+ years of expertise in ML[1], CV[2] and NLP[3].

- Currently a second year MSc student at the 3D Language Lab at the Simon Fraser University, focusing on 3D captioning, grounded video captioning and video representation learning.

- Open source enthusiast with applied knowledge of object oriented design on a mid-level framework for visual question answering based on PyTorch, and open source publications such as Scan2Cap.

- Proficient in PyTorch, PyTorch Lightning, Detectron, AllenNLP and familiar with HuggingFace Transformers, COCO API, FAIR MMF, Tensorflow, Keras, and more.

- Experienced in working with computer vision datasets such as ActivityNet, ActivityNet Captions, AcitivityNet Entities, Visual Genome, Microsoft COCO, IQA, EQA, Chest X-Ray 14, ScanRefer and ScanNet.

- Proficient in Python, Assembly, Object Oriented and Functional Software Design, and familiar with C/CUDA, OpenMP and FPGA Programming.

- Experienced in Unix command line, remote development and version control.

- Ability to communicate complicated ideas in a simplified manner, eager to ask why, and energized by team collaboration.

Publications and Pre-prints

1. Dave Zhenyu Chen, **Ali Gholami**, Matthias Nießner and Angel X. Chang, *Scan2Cap: Context-aware Dense Captioning in RGB-D Scans,* In IEEE Computer Vision and Pattern Recognition (**CVPR**), 2021.

Work Experience

GRUVI Lab - 3D Language Group, *Simon Fraser University, Canada*
Research Assistant — Advised by Dr. Angel Xuan Chang　　　　　　　　　　　　*Aug. 2019 – Spring. 2021*
- Studied and implemented 2D and 3D dense captioning pipelines.
- Designed an spatio-temporal scene graph to improve the intra-segment and inter-segment relation/attribute references in descriptions.

Bio-intelligence Research Unit, *Sharif University of Technology, Iran*
Research Assistant — Advised by Dr. Ali Ghazizadeh　　　　　　　　　　　　*Jun. 2018 – July. 2019*
- Provided deep learning based medical imaging solutions for the National Research Institute of Tuberculosis and Lung Diseases, Dr. Masih Daneshvari Hospital.
- Developed algorithms for detection, localization and segmentation of diseases in lung chest x-rays.
- Developed CNN visualization techniques such as Saliency and Prediction Mean Maps which aided in making CNN predictions more interpretable.

ArvanCloud, *Tehran, Iran*
Web Development Intern　　　　　　　　　　　　　　　　　　　　　　　　*Jun. 2017 – Sep. 2017*
- Developed an administrative panel for an smart lock system using PHP and Laravel.

Fandogh, *Tehran, Iran*
Android Development Intern　　　　　　　　　　　　　　　　　　　　　　　*Jun. 2017 – Sep. 2017*
- Design and implementation of a weather forecast application with Java SE & Android Studio.
- Development of a poetry application with React Native.

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[1] Machine Learning
[2] Computer Vision
[3] Natural Language Processing

EDUCATION

Simon Fraser University — School of Computing Science , *Burnaby, Canada*
M.Sc. of Computer Science   *Aug. 2019 – Spring. 2021*
GPA: **4.22/4.33** — Advised by Dr. Angel Xuan Chang

Amirkabir Univeristy of Technology, *Tehran, Iran*
B.Sc. of Software Engineering   *Aug. 2016 – April. 2019*
GPA: **17.87/20** — Advised by Dr. Mohammad Rahmati

- Thesis: Design and Implementation of A Mid-level PyTorch-based API for Visual Question Answering

Teaching and Mentorship

NLP (Graduate), *School of Computing Sciences, Simon Fraser University*
Teaching Assistant   *Spring 2020 & Fall 2020*
○ Designed and taught tutorials on Python programming and PyTorch for NLP.
○ Designed and graded assignments.

Summer School of Intelligent Learning, *School of Cognitive Sciences, IPM*
Instructor   *Aug. 2019 – Aug. 2019*
○ Taught Python programming crash course. I also served as a mentor at this event.

First Neuroscience Symposium, *Sharif University of Technology*
Instructor   *Feb. 2019 – Feb. 2019*
○ Taught fundamentals of EEG processing with convolutional neural networks.

Computational Intelligence (Undergraduate), *Amirkabir University of Technology*
Teaching Assistant   *Dec. 2018 – Jun. 2019*
○ Designed and taught tutorials on fuzzy logic and evolutionary algorithms.

ML (Graduate), *Sharif University of Technology*
Guest Teaching Assistant   *Dec. 2018 – Jun. 2019*
○ Held tutorial classes, designed and graded assignments.

Foundations of Data Mining (Undergraduate), *Amirkaibr University of Technology*
Teaching Assistant   *Sep. 2018 – Dec. 2018*
○ Held tutorial classes, designed and graded assignments.

Microprocessors and Assembly Programming (Undergraduate), *Amirkaibr University of Technology*
Teaching Assistant   *Sep. 2017 – Dec. 2017*
○ Held tutorial classes, designed and graded assignments.
○ Contributed in testing a multi-purpose ATmega-32 based educational board.

Selected Achievements

○ Computing Graduate Fellowship (34.5K CAD) — **Simon Fraser University**   Jan. 2019
○ SYDE Graduate Fellowship (36K CAD) — **University of Waterloo**   Dec. 2018
○ 3rd Most Active GitHub Developer in Iran — based on commits.top   Jul. 2018
○ Ranked 1703 out of 230K — National University Entrance Concours   Jul. 2014
○ 2nd Dan Black Belt in Kyokushin Karate   Jul. 2012

Volunteer Positions

○ Conference on Neural Information Processing Systems (NeurIPS)   Dec. 2019
○ Fire Marshal of TASC1 building at SFU Burnaby Campus   Sep. 2019

Language Proficiency

○ **English**: *TOEFL Score* **112** (R: **29**/ L: **27**/ S: **27**/ W: **29**)
○ **Persian**: *Native*
○ **Arabic**: *Familiar*

References

- **Dr. Angel Xuan Chang**
  Assistant Professor of Computer Science, Simon Fraser University   (angelx@sfu.ca)