ARCHIT CHECKER

Email : archit.checker@alumni.ashoka.edu.in   **Website** : checker5965.github.io

EDUCATION

Ashoka University   *August 2017 - May 2020*
B.Sc. (Honours) Computer Science   CGPA: 3.86/4
Department of Computer Science   Major CGPA: 3.87/4

WORK EXPERIENCE

Amuse Labs   *September 2020 - Present*
Software Engineering Fellow

· Set up the entire service monitoring infrastructure for several high priority clients such as The Washington Post, LA Times, and more. Tools used were Docker, Zabbix, OpsGenie, and Uptime Robot.
· Worked on performance improvement of the PuzzleMe platform bringing down average page load times from over 4 seconds, to 200 milliseconds, opening up new business prospects.

INTERNSHIPS

Ashoka University   *Research Intern*
Adaptive Multiple Best Offset Prefetcher   *Summer 2020*
Dr. Manu Awasthi

· Worked on a novel hardware prefetcher design.
· Designed and conducted experiments using ChampSim simulator to measure prefetcher coverage, accuracy, timeliness, and pollution.
· Our prefetcher achieved a 47% improvement in IPC over no prefetching, with the state of the art being 52%. Evaluation was done using the SPEC CPU 2017 traces.

Lehigh University   *Research Intern*
HearMyCI   *Summer 2019*
Dr. Michael Burger

· Led technical development on an app to provide cochlear implant simulations to caregivers of children with hearing loss.
· Used digital signal processing techniques to accurately simulate cochlear implants.
· Developed a prototype web application using Django and Python.

Trivedi Centre for Political Data   *Winter Intern*
Surf   *Winter 2018*
Dr. Sudheendra Hangal

· Worked on adding features to Surf - a name resolution software for Indian Political Data.
· Added functionality for reading custom datasets and ID, column, and sort spec changes.
· Mined normalization rules using edit-distance to improve the Surf clustering algorithm.

SELECT PROJECTS

Context Free Grammar Parser   *April 2020 - May 2020*
Dr. Mahavir Jhawar, Ashoka University

· Developed a web application using JavaScript to parse Context Free Grammars.

· Used Earley parsing algorithm, along with an original algorithm for example generation.
· The full project can be **viewed here.**

Enron e-mail Dataset Clustering
Nov 2019 - Dec 2019
Dr. Ravi Kothari, Ashoka University

· Used LDA to perform Topical Modelling on the Enron email dataset.
· Best achieved coherence value of 0.58 with 5 topics and perplexity value of -8.2 with 7 topics.
· Visualizations can be found **here** and **here**. Full report - **here.**

Architectural Exploration of Memory Hierarchies
September 2019 - Present
Dr. Manu Awasthi, Ashoka University

· Studied about various side-channel attacks, and principles of secure processors and architectures.
· Studied about prime + probe, flush + reload, and evict + reload attacks.
· Mounted flush + reload attack on GnuPG and implemented the Spectre attack.

ClassifierC
September 2018 - November 2018
Dr. Goutam Paul, ISI Kolkata

· Implemented a Naive Bayes Classifier, and a K-Means Clustering algorithm in C.
· Used Python to pre-process various datasets (Iris, Pima Indian, Loan Prediction, Black Friday etc.) and achieved accuracies similar to Python libraries.

AWARDS AND HONORS

· Received the Computer Science Bronze Medal for Academic Excellence — *June 20*
· Received the Computer Science Service Excellence Award — *June 20*
· Qualified for the Regionals - International Collegiate Programming Contest (**ICPC**) — *November 19*
· Selected for Undergraduate Architecture (uArch) Workshop at **ISCA 2019** — *April 19*
· Won the first prize in IIM Indore's Leadership competition - Chaitanya — *September 18*
· Finalist in Digital Masala Challenge hackathon by Facebook and YKA — *December 2017*

TECHNICAL SKILLS

Programming Languages	Python, C, Java, JavaScript, C++, Assembly, Shell Scripting
Simulators	ChampSim, Mastik
Frameworks and Tools	Django, Flask, Numpy, Pandas, Keras, LaTeX, Docker, Zabbix

TEACHING

Role	Course	Semester	Class Size	Feedback
TA	The New Geography of the Information Age	Summer 20	30	4.32/5
TA	Operating Systems	Spring 20	31	4.34/5
TA	Foundations of Computer Programming	Monsoon 19	99	4.67/5
Helpdesk Tutor	Computer Organization and Systems	Monsoon 19	-	-

LEADERSHIP

Computer Science Academic Representative
2019 - 2020
Ashoka Academic Advisory Board

CS Curriculum Developer
2019
Neev Program - Teaching Underprivileged Children