Noveen Sachdeva

nosachde@ucsd.edu | www.noveens.com/ | noveens | noveensachdeva | Google Scholar

Education

UC San Diego — *USA*

PH.D. IN COMPUTER SCIENCE — *2020 - PRESENT*

Advisor: Prof. Julian McAuley , *GPA:* 4.0

IIIT Hyderabad — *India*

B.TECH (HONS.) & M.S IN COMPUTER SCIENCE — *2015 - 2020*

GPA: 9.75/10 (M.S)

Experience

Microsoft Research — *Bangalore, India*

RESEARCH INTERN — *Jan. 2020 - Jun. 2020*

- Worked with Dr. Manik Varma and his group on building better machine learning algorithms at the million-scale (Extreme Classification).
- Formulated a scalable, GCN-inspired algorithm which exploits label-label correlation patterns to massively improve tail-label performance.
- Full paper accepted for publication at WWW '21.

UC San Diego — *San Diego, CA*

RESEARCH ASSISTANT — *Aug. 2019 - Nov. 2019*

- Worked with Prof. Julian McAuley on aspects of applied machine learning, specifically in the context of NLP and recommender systems.
- Ascertained a highly relevant problem in existing recommender systems that exploit textual reviews for rating prediction, and generalize it.
- Wrote a paper about the realized problem and possible fixes under different scenarios. Paper accepted for publication at SIGIR '20.

Cornell University — *Ithaca, NY*

RESEARCH ASSISTANT — *Jun. 2019 - Jul. 2019*

- Worked with Prof. Thorsten Joachims and his group at the intersection of causal inference, counterfactual learning, and reinforcement learning.
- Contributed to a $1 Million project (NSF #1513692) on making off-policy learning from biased, logged contextual-bandit data more robust.
- Formalized a highly relevant problem and generalized different estimators. Paper accepted for publication at KDD '20 (Research Track).

PwC - PricewaterhouseCoopers — *Tampa, FL*

DATA SCIENCE INTERN (REMOTE) — *Aug. 2018 - Nov. 2018*

- Worked with the data science and innovation team on clause extraction from sensitive legal documents for top clients in the US.
- Formulated a de-generate pipeline and compared different statistical and deep-learning based models for the given task.
- Reduced task time from days to a few hours which enabled PwC to get new clients in the legal sector.

National Research Council of Italy — *Rende, Italy*

RESEARCH ASSISTANT — *May. 2018 - Jul. 2018*

- Worked with senior researcher, Dr. Giuseppe Manco on building novel and better systems suited for the task of next-item recommendation.
- Devised a taxonomy of VAE models for collaborative filtering, demonstrating huge gains over existing state-of-the-art on real-world datasets.
- The project's findings were later published at top data-mining conference, WSDM '19.

Google Summer of Code — *Nüremberg, Germany*

OWNCLOUD — *May. 2017 - Aug. 2017*

- Implemented a JS-library, with exhaustive unit-tests and swagger-documentation, which works both on Node.JS and browser.
- Presented talk at annual ownCloud conference at Nüremberg, Germany. Project led to real-world gains in usage of ownCloud.

IIIT Hyderabad — *Hyderabad, India*

- Web-System Administrator — *Fall 2017, Spring 2018*
- TA for Data Warehousing and Data Mining (CSE445), Database Systems (CSE441) — *Fall 2018, Spring 2019*

Publications

ECLARE: Extreme Classification with Label Graph Correlations — *[NOTIFIED]*

ANSHUL MITTAL, **NOVEEN SACHDEVA**, SHESHANSH AGRAWAL, SUMEET AGARWAL, PURUSHOTTAM KAR, MANIK VARMA

In the The Web Conference 2021 – WWW '21

Off-policy Bandits with Deficient Support *[LINK]*

Noveen Sachdeva, Yi Su, Thorsten Joachims

In the 26th ACM SIGKDD Conference on Knowledge Discovery and Data Mining – KDD '20 (Research Track)

How Useful are Reviews for Recommendation? A Crit. Review & Potential Improvements *[LINK]*

Noveen Sachdeva, Julian McAuley

In the 43rd International ACM Conference on Research and Development in Information Retrieval – SIGIR '20

Sequential Variational Autoencoders for Collaborative Filtering *[LINK]*

Noveen Sachdeva, Giuseppe Manco, Ettore Ritacco, Vikram Pudi

In the 12th ACM International Conference on Web Search & Data Mining – WSDM '19

Attentive Neural Architecture Incorporating Song Features For Music Recommendation *[LINK]*

Noveen Sachdeva, Kartik Gupta, Vikram Pudi

In the 12th ACM International Conference on Recommender Systems – RecSys '18

Explicit Modelling of the Implicit Short Term User Preferences for Music Recommendation *[LINK]*

Kartik Gupta, **Noveen Sachdeva**, Vikram Pudi

In the 40th European Conference on Information Retrieval – ECIR '18

Achievements

- Reviewer for ICDM' 18, AAAI' 19, KAIS '19,20
- Mentoring a group of three brilliant undergraduates at UC San Diego (2020)
- Awarded the Jacobs School of Engineering Fellowship at UC San Diego (2020)
- Received generous travel grant from SIGIR to present paper at SIGIR (2020)
- Received generous travel grant from SIGIR & Flipkart to present paper at WSDM (2019)
- Qualified for ACM-ICPC Asia Onsite Regionals. *Online:* 95^{th}, *Onsite:* 120^{th} (2018)
- Dean's Research Award for exceptional undergraduate research work at IIIT Hyderabad (2018)
- Dean's Award for Academic Excellence: Top 10% of batch (2018)
- Mentor for Google Code-In at JBoss, RedHat (2017)

Projects

LED Display Construction & Home Automation

Independent Lockdown Project *Apr. 2020 - Jul. 2020*

- Built a 42×24 Wi-Fi controlled LED display using commonly available LED strips. Core features include in-room music visualization using FFT, image cast, animations, etc. Final size equivalent to a $32''$ TV, and able to achieve 60 FPS.
- Made my own smart switches using electronic relays and micro-controllers. Core features include a small size to fit inside a common switch-board and a significantly lower price than (10x) commercial solutions. Bundled everything together with an in-house android application.

Generative models for Stochastic Point Processes

Independent Remote Collaboration with *Prof. Giuseppe Manco* *Jan. 2019 - Dec. 2019*

- Leveraging the modelling power of weibull distributions to predict user return-time to media-streaming-services like YouTube, Netflix etc.
- Formulating and experimenting with generative models like GANs & VAEs – maximizing the likelihood of the actual return-time.

PEGASOS: Gradient based solver for SVM

Optimization Methods Course Project under *Prof. C V Jawahar* *Mar. 2019 - May. 2019*

- Implemented both linear and kernelized PEGASOS, results and run-time matching with popular libraries like sklearn.
- In addition to given problem statement, exploited the concept of Gramian Matrices to speed up the learning process for kernelized PEGASOS.

Compiler for C-like language, Decaf

Course Project under *Prof. Suresh Purini* *Oct. 2018 - Dec. 2018*

- Created a flex tokenizer and bison parser from a Context Free Grammar, using visitor software design pattern for modular compiler design.
- Parsed source programs into an Abstract Syntax Tree and then into LLVM intermediate representation (LLVM IR).

Skills

Languages Python, C++, C, Bash, MATLAB

Machine Learning PyTorch, Tensorflow, Keras, scikit-learn

Miscellaneous LaTeX, Git, SQL, Neo4J, Flask, Node.JS, PHP