Manraj Singh Grover

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GitHub, Google Scholar, LinkedIn

EXPERIENCE

TensorFlow.js, a Google Brain project — Remote
Open Source Contributor — *Sept 2017 – August 2019*

- Implemented and integrated various optimizers, metrics, loss and math operations in the framework.
- Contributed multiple examples showcasing frameworks capabilities and usability; Cited in a **book**.
- Mentored student for Google Summer of Code project **"Reasonable Effectiveness of Mobile Inference: Adaptive Growth of the TensorFlow.js Model Garden"** who composed 3 models for the community.
- **Statistics:** 130 pull requests opened; 114 commits made.

Indraprastha Institute of Information Technology, Delhi (IIIT-D) — Delhi, India
Research Associate at MIDAS Lab, **Advisor: Dr. Rajiv Ratn Shah** — *May 2019 – Present*

- **Multi-modal Automatic Speech Grading [P1]**: Building pipeline for extracting and modelling speech and text features for automatic grading of L2 test responses in collaboration with Second Language Testing Inc. and Columbia University.
- **audino: Audio Annotation Tool [P2]**: Developed a web-based collaborative audio annotation tool for segmenting, transcribing and labelling segments of audio for the curation of speech datasets.

Practo Technologies Pvt. Ltd. — Bangalore, India
Senior Software Engineer — *Sept 2016 – April 2019*

- **Distributed Training Paper [J1]**: Surveyed various algorithms and techniques used in distributed training of models and presents current state-of-the-art for a modern distributed training framework.
- **Sepsis Detection**: Collaborated with doctors to extract relevant vitals and laboratory results from MIMIC-III Critical Care Database and modelled them using boosting trees for detection of Sepsis at hospital admission.
- **Risk of Administrative Segregation**: Developed a Boosting tree-based model for predicting the risk of administrative segregation of prisoners for North Dakota Department of Corrections and Rehabilitation, US, using demographics, criminal activities, past behaviour and historical information shared in free text.
- **Practo Search Autosuggester**: Aggregated various data sources of Practo Data Warehouse and developed a database-synced location-based Autosuggestion Service for improved suggestions, giving more visibility to products

Netaji Subhas Institute of Technology (NSIT), University of Delhi — Delhi, India
Undergraduate Researcher — *Sept 2014 - May 2016*

- **Automated Conveyor Belt Sorting System**: Bachelor's Thesis on building an Arduino-controlled Automated Conveyor Sorting System Hardware Prototype complete with user interface to scan and sort packages based on Barcode, QR Code, Color and other metadata. **Advisor: Dr. Prerna Gaur, Dr. Umang Soni**

Refiral — Delhi, India
Product Developer Intern — *June 2014 - July 2014*

- **Business Management and Analytics Tool**: Developed a platform for business developers and leaders to track progress, follow up a client, managing conversions and much more using PHP, JavaScript and MySQL.
- **Mail Share**: Provided a new sharing option to allow users to refer products on Gmail. Developed using Google Contacts API, PHP, and MySQL.

PUBLICATIONS

Journal Publication(s)

[J1] K. S. Chahal, **M. S. Grover**, K. Dey, R. R. Shah, "A Hitchhikers Guide On Distributed Training Of Deep Neural Networks." *Journal of Parallel and Distributed Computing, Vol. 137, 2020, pp. 65-76.* [**PAPER**]

Preprint(s)

[P1] **M. S. Grover**, Y. Kumar, S. Sarin, P. Vafaee, M. Hama, R. R. Shah, "Multi-modal Automated Speech Scoring using Attention Fusion,". [**PREPRINT**]

[P2] **M. S. Grover**, P. Bamdev, Y. Kumar, M. Hama, R. R. Shah, "audino: A Modern Annotation Tool for Audio and Speech,". [**PREPRINT**]

Conference Publication(s)

[**C1**] O. R. Nasir, S. K. Jha, **M. S. Grover**, Y. Yu, A. Kumar, R. R. Shah, "Text2FaceGAN: Face Generation from Fine Grained Textual Descriptions," *2019 IEEE Fifth International Conference on Multimedia Big Data (BigMM), Singapore, Singapore, 2019, pp. 58-67.* [**PAPER**]

[**C2**] B. L. K. Jolly, P. Aggrawal, S. S. Nath, V. Gupta, **M. S. Grover**, R. R. Shah, "Universal EEG Encoder for Learning Diverse Intelligent Tasks," *2019 IEEE Fifth International Conference on Multimedia Big Data (BigMM), Singapore, Singapore, 2019, pp. 213-218.* [**PAPER**]

[**C3**] G. Saxena, **M. S. Grover**, S. Chakervarty, "Generating Word Clusters By Graph Clustering Based On Hearst Patterns," *2016 1st India International Conference on Information Processing (IICIP), Delhi, 2016, pp. 1-7.* [**PAPER**]

OPEN SOURCE

Project(s)

- **audino**: A web-based collaborative annotation tool for audio and speech dataset curation.   650★
- **halo**: A python package that provides beautiful spinners for the terminal, IPython and Jupyter; 1M+ downloads 2.3k★
- **Single Div Project**: Explore possibilities of creating things using one div element.   1.6k★
- **football-cli**: Command Line Interface that allows developers to follow football right in the terminal.   980★
- **algorithms-js**: Consumable Data Structures and Algorithms library in JavaScript.   134★

Contribution(s)

- **DuckDuckGo**: Contributed to 30+ Instant Answers with bug fixes and improvements; Created 25+ new Instant Answer modules using JSON, Perl and JavaScript; Mentored new contributors and audited peer code

VOLUNTEERING EXPERIENCE

- **58th Annual Meeting of the Association for Computational Linguistics (ACL)**	*July 2020*
- **Google Summer of Code Mentor, TensorFlow**	*May 2019 - Aug 2019*
- **Rails Girls Summer of Code Coach, Servo, Mozilla**	*July 2018 - Sept 2018*
- **Google Code-In Mentor, Mifos Initiative**	*Dec 2017 - Jan 2018*
- **Open Source Community Leader, DuckDuckGo**	*May 2017 - May 2018*
- **Core Contributor, Mozilla Delhi**	*Jun 2015 - Jun 2017*
- **General Secretary, IEEE NSIT Student Branch**	*Jun 2014 - Jun 2015*

EDUCATION

Netaji Subhas Institute of Technology, University of Delhi, India	69.69%
*Bachelor of Engineering in Instrumentation and Control Engineering; **First Class***	*2012 – 2016*
Mount Saint Mary's School, New Delhi, India	87%
Std. 12, Science with Computer Science; Best of four scores	*2009 – 2011*
Mount Saint Mary's School, New Delhi, India	93.6%
Std. 10; Best of five scores	*1998 – 2009*

ACHIEVEMENTS

- **Recipient of Google Open Source Peer Bonus award**	*Aug 2018*
- **3rd Place Winner at Practo Sandbox Hackathon 2017**	*Dec 2017*
- **6th Place Winner at IndiaHacks Machine Learning Hackathon 2017**	*Sept 2017*
- **Listed in Github's Top 5 Trending Developers for projects: halo & SingleDivProject**	*2016, 2017*
- **Highest Rating of 2024 in Overall CodeChef Long Challenge rankings**	*Dec 2015*
- **Recipient of University Academic Excellence Scholarship for 1st and 4th year**	*2013, 2016*