

# Mittul Singh

## Personal Information

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Nationality: Indian

## Professional Experience

- Postdoctoral Researcher** at Speech Recognition Group, Aalto University, Finland *[Apr. 2018 - Present]*
- Modeling rare-word accurate RNNLM approximation for first-pass decoding
  - Unsupervised training of acoustic models for low-resource languages
- Postdoctoral Researcher** at Spoken Language Systems Group, Saarland University, Germany *[Aug. 2017 - Mar. 2018]*
- Develop model adaptation techniques for Speech Assistant for airline traffic controllers
  - Develop automatic schemes to re-train Speech systems with newly transcribed data
  - These efforts were made as part of and funded by the [MALORCA](#) - an EU project
- Director and Technology Strategist** at [Inventra](#) Technologies Pvt. Ltd., Greater Noida, India *[Oct. 2013 - Mar. 2016]*
- Designed and developed an activity based social network, namely PopIT, managing a team of three people
  - Developed a recommendation system to suggest activities to users and communities

## Education

- Ph.D student** at [Spoken Language Systems Group \(LSV\)](#), Saarland University, Germany *[Oct. 2011 - Jul. 2017]*  
Supervisor: Prof. Dr. Dietrich Klakow  
*Funded by International and European Collaborative projects ([BABEL](#), [METALOGUE](#))*
- Integrated Master of Technology in Mathematics and Computing** *[Aug. 2005 - July 2010]*  
at Indian Institute of Technology, Delhi (IIT Delhi), India *Thesis GPA 10/10*

## Teaching Experience

- Teaching Assistant:** for master's course on **Speech Recognition**, Aalto University *[Nov. - Dec. 2019]*
- Lectured** a class on Language Modeling for **Natural Language Processing**, Aalto University, *[March 2019]*
- Teaching Assistant:** for master's course on **Speech Recognition**, Aalto University *[Nov. - Dec. 2018]*
- Co-Lecturer:** for master's course on **Natural Language Processing**, Ukrainian Catholic University (UCU), Ukraine *[June 2018]*
- Teaching Assistant:** for master's course on **Neural Network Implementation and Applications**, Saarland University *[Oct. 2017 - Feb. 2018]*
- Co-Lecturer:** for Lviv Data Science Summer School's course **Framework for Problem Solving in Natural Language Processing**, UCU, attended by bachelor and master students *[July 2017]*
- Lectured** a class on Language Modeling for the master's course on **Pattern and Speech Recognition**, Saarland University *[Oct. 2016 - Feb. 2017]*
- Teaching Assistant:** for master's course on **Language Technology-1**, Saarland University *[Oct. 2015 - Feb. 2016]*
- Co-Lecturer:** for master's course on **Foundations of Speech and Language Technology**, Saarland University *[Oct. 2013 - Nov. 2013]*
- Co-Lecturer:** for Workshop on **The MATLAB Optimization Toolbox**, IIT Delhi *[March 2010]*

## Advising Experience

- Collaborations with **Finnish Telecommunications Company - Elisa**: Mentored a team of two research engineers (Honain Derrar & Nikhil Ranjan) to develop an automatic speech recognition pipeline for conversational Finnish
- Advising at Saarland University: **Bachelors:** Phillip Wetmann and Dominik Weber. **Masters:** Ilyas Celik, Siwen Guo, Anu Sundar, Nima Nabizadeh, Debjit Paul, Juan Gabriel Umaña-Quirós
- Advising at Aalto University: **Bachelors:** Minna Seppälä. **Masters:** Vasumathi Narella, Riko Nyberg.  
**Course-Projects:** Aditya Surikuchi, Ahmed Bin Shafaat, Andra Cimpan, Eduardo Rosado Fernández, Jan Marek, Kaisa Sarén, Luis Amezcua Aragon, Olli Kanerva, Pauliina Paavilainen, Pavithra Vijayakrishnan, Pellervo Ruponen, Ragheb Al-Ghezi, Swati Choudhary, Terhi Tenhunen, Thomas Spilsbury

## Talks & Presentations

- **Invited talk** at Spoken Language Systems Group, December 2018, presented my work on OOV Prediction in KWS, attended by the head and doctoral students of the group
- **Invited talk** at [MPI-Inf](#) Informatics Deep Learning Users Group, presented work on Long-Term Dependencies, attended by doctoral students
- **Invited talk** at IDEaL Deep Learning Hackathon 2017, presented my work on neural network LMs, attended by postdoctoral and doctoral researchers
- **Invited talk** at IDEaL PhD. Day, presented the work on inducing rare-word representations, attended by the research staff of computational linguistics at Saarland University
- **Invited talk** at [IDeaL](#) language modeling user's group, presented the skip-grams and its extensions, attended by postdoctoral, doctoral and masters-level researchers

## Other Academic Activities

- **Led and organized a reading group** to discuss important Speech and Language Conference papers from Jan. 2019 to present
- **Applied for Academy of Finland postdoctoral research grant**, results awaited May 2020
- **Reviewed papers** *language modeling and automatic speech recognition architectures* for Interspeech 2019 Conference as part of the proceedings peer-review process in Summer 2019
- Shadow reviewer for Mikko Kurimo for papers at Interspeech 2018 and ICASSP 2019, 2020 at Aalto University
- Successfully attended *Teaching Assistant as a Learning Instructor* by Jukka Parviainen, Kirsti Keltikangas and Luis Costa at Aalto University in Winter 2018
- Co-chaired the oral presentation session on *Automatic Speech Recognition Systems and Technologies* at Interspeech 2018, attended by around 40 people
- Reporting for BABEL and MALORCA projects and presentation of MALORCA results at the Second Stakeholder Workshop 2018 and at SESAR Joint Undertaking 2018
- Co-presented MALORCA Demo as part of the Saarland University Podium at CeBIT 2017
- Co-wrote grant proposals for the extension of [SFB1102](#) funding at Spoken Languages Systems Group, Saarland University
- Successfully attended *Scientific Writing Course* by Dr. Rose Hoberman at [MPI-SWS](#) in Summer 2016
- Successfully attended Soft Skills Workshops on *Speaking and Acting with Impact*, and *Status and Professional Communication for Intro- and Extroverts* by Dr. Sylvia Löhken in Summer 2013