# Dr. Sambit Praharaj

#### PhD on EdTech

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"The greatest danger for most of us is not that our aim is too high and we miss it but that it is too low and we reach it." — Michelangelo

## Education

### **Open University of the Netherlands**

Heerlen, Netherlands

PhD on EdTech (Collaboration Analytics with Multimodal Learning Analytics)

September 2017 - February 2022

- PhD dissertation on "Measuring the Unmeasurable? Towards Automatic Co-located Collaboration Analytics"
- Successfully defended and graduated on 11th March 2022
- Worked with Multimodal Learning Analytics in Co-located Collaboration using sensors to detect different indicators of collaboration quality during a co-located collaboration task and did automatic collaboration analytics
- · Collaborated with DIPF Leibniz Institute for Research and Information in Education Frankfurt, Zuyd University and CEL, Delft University

### **Delft University of Technology**

Delft, Netherlands

Msc. in Computer Science

September 2015 - August 2017

- Master's thesis on "Data Analytics in Web-based Education in the Higher-education Classroom"
- · Collaborated with Lambda lab in WIS research group at TU Delft and researchers from Lugano, Switzerland for my thesis
- Set up an experiment and analyzed the data gathered from the lecture interaction event logs of around 300 students in each lecture in a Bachelor's classroom to determine the attention level of students with a goal to improve the state-of-the-art classroom teaching

VSSUT Burla Odisha, India

Bachelor of Technology in Information Technology

2011-2015

• Major Project: Energy Efficient Routing in Wireless Sensor Networks

### **Research interests**

Data Analytics, Computer Science, EdTech

Collaboration Analytics, Multimodal Learning Analytics, Learning Analytics, Technology Enhanced Learning, Natural Language Processing, Educational Data Science, Educational Technology, Data Analytics

### **Publications**

#### Learning Analytics and Knowledge (LAK 22)

California, USA (Online)

S. Praharaj, M. Scheffel, M. Schmitz, M.Specht, H. Drachsler. Towards Collaborative Convergence: Quantifying Collaboration Quality with Automated Co-located Collaboration Analytics

March 2022

• Designed a dashboard to analyze the quality of collaboration automatically

### **IEEE Transactions in Learning Technology**

Journal

S. Praharaj, M. Scheffel, H. Drachsler, M.Specht. Literature Review on Co-Located Collaboration Modeling

Using Multimodal Learning Analytics—Can We Go the Whole Nine Yards?

July 2021

Did a Literature Review to detect indicators of collaboration quality, model them in different collaboration scenarios

MDPI Sensors

Journal

S. Praharaj, M. Scheffel, M. Schmitz, M. Specht, H. Drachsler. Towards Automatic Collaboration Analytics for Group Speech Data Using Learning Analytics

May 2021

• Developed a prototype to do automatic collaboration analytics in a co-located collaboration task

#### International Conference on Learning Sciences (ICLS 20) ISLS

Nashville, USA

 $\textit{H. Chen, E. Tan, Y. Lee, S. Praharaj, M. Specht and G. Zhao. Developing AI into Explanatory Supporting Models: \\$ 

June 2020

 $An \ Explanation-visualized \ Deep\ Learning\ Prototype\ for\ Computer\ Supported\ Collaborative\ Learning$ 

• Assisted in the project with CEL, TU Delft

### International Conference on Multimodal Interaction (ICMI 19) ACM

Suzhou, China

S. Praharaj. Co-located Collaboration Analytics

October 2019

• Presented in PhD doctoral consortium with a full scholarship

# European Conference on Technology Enhanced Learning (EC-TEL 19) Springer LNCS

Delft, Netherlands

S. Praharaj, M. Scheffel, H. Drachsler and M. Specht. Group Coach for Co-located Collaboration

September 2019

• Showed a demo for the developed tool to give real-time feedback during co-located collaboration

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EC-TEL 2018 CEUR Leeds, UK

S. Praharaj, M. Scheffel, H. Drachsler and M. Specht. MULTIFOCUS: MULTImodal Learning Analytics FOr Co-located Collaboration Understanding and Support

September 2018

• Wrote PhD research proposal for the doctoral consortium

### **EC-TEL 2018 Springer LNCS (Track: Innovative Learning Infrastructure)**

Leeds, UK

S. Praharaj, M. Scheffel, H. Drachsler and M. Specht. Multimodal Analytics for Real-time Feedback in

September 2018

Co-located Collaboration

• Did a State-of-the-art-survey to detect indicators of collaboration quality and feedback and designed a pilot study to give real-time feedback during PhD meetings

# User Modeling, Adaptation and Personalization (UMAP 17) ACM (Track: Technology Enhanced Adaptive Learning)

Bratislava, Slovakia

V. Triglianos, S. Praharaj, C. Pautasso, A. Bozzon and C. Hauff. Measuring Student Behaviour Dynamics in a Large Interactive Classroom Setting

July 2017

· Analyzed the data captured during all the 15 lectures for the paper which is also a part of my master thesis

### **DESOSA (Delft Students on Software Architecture)**

TU Delft May 2016

Chapter on Ember: A framework for creating ambitious web applications

· Worked to communicate with the developers on Github, Slack and refactored part of the code on Github, contributed for the chapter

## Experience

# Co-organized a workshop in CSCL Conference with teams from NIE Singapore, Canada and USA

Lvon. France

Did a live demo in the workshop on Multimodal Learning Analytics in Knowledge Building

June 2019

# Organized 2 workshops during Joint Technology Enhanced Learning Summer School

Bari, Italy

One workshop related to my PhD and other was related to balancing PhD life with supervisor

June 2019

### **Contributed to SafePAT Project as part of PhD research**

Netherlands, Germany, Belgium

Improve the (cross-border) Group Handover Training during change of shifts by using sensors and feedback (otherwise known as "Multimodal Learning Analytics during Medical Simulation and Training")

May 2018 - Oct 2019

### Creator of YouTube channel: SambitPhD

YouTube

Vlog my experiences on studying, living in Netherlands and Europe and mentor professionals for study abroad

October 2018 - Present

• Share my PhD experiences, conference experiences, study and living experience in Netherlands, Europe to help students and professionals, mentor them to study abroad

### Researcher at CNERG (Complex Networking Group), IIT Kharagpur

Kharagpur, India

Undergraduate Research Intern

May 2014 - June 2014

- Performed research on the project titled as: "Measuring Similarity in Undirected, Unweighted Graphs"
- · Simplified complex social and telecom networks which evolve with time by designing a combined similarity measure

# Supervision and Teaching \_

# **Master Thesis students and course**

Co-supervised and assisted

- Co-supervised 2 Master thesis students in the Open University
- · Assisted with implementing a new course in Open University digital learning environment (yOUlearn)

# Review

# Editor of conference, reviewer of conferences and journals

- Co-editor of EC-TEL Conference Practitioner Track Proceedings, 2018
- Reviewed for European Conference on Technology-Enhanced Learning (EC-TEL), Learning Analytics and Knowledge (LAK), International Conference on Multimodal Interaction (ICMI), Computer Supported Collaborative Learning (CSCL), Human Factors in Computing Systems (CHI) and Artificial Intelligence in Education (AIED) conferences
- Reviewed for Journal of Computer Assisted Learning (JCAL), IEEE Transactions in Learning Technologies (IEEE TLT), Journal of Learning Analytics (JLA), Education Technology Research and Development (ETRD) and Research Learning and Research Practice (RLRP) journals