

Dr. Sambit Praharaj

POSTDOC ON AI IN 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

Research Experience

CAIS and Ruhr University Bochum

Bochum, Germany

Postdoctoral Researcher on Educational Technology and AI

June 2022 - Present

- Detect the quality of collaboration during group work
- Build real-time adaptive feedback to facilitate the collaboration
- Use multimodal learning analytics, collaboration analytics and artificial intelligence
- Got invited for a research visit to present my research ideas in the Computer Science department of Laval University, France

Delft University of Technology

Delft, Netherlands

Visiting researcher as part of PhD research

Oct 2019 - June 2020

- Collaborated on a project in the context of collaborative learning in knowledge building with researchers from Delft University and National Institute of Education from NTU Singapore

SafePAT Project

Netherlands, Germany, Belgium

Project researcher: Contributed to the project as part of PhD research

May 2018 - Oct 2019

- 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 Trainin”)

Complex Networking Group, IIT Kharagpur

Kharagpur, India

Research Internship during B.Tech

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

Education

Open University of the Netherlands

Heerlen, Netherlands

PhD on EdTech (Collaboration Analytics with Multimodal Learning Analytics and AI)

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 Center of Education and Learning (CEL), Delft University
- Got a full scholarship to present my PhD research in the doctoral consortium in ICMI conference in China

Delft University of Technology (Grade: 7.38/10)

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 (Grade: 8.74/10)

Odisha, India

Bachelor of Technology in Information Technology

2011-2015

- Major Project: Energy Efficient Routing in Wireless Sensor Networks

Ispat English Medium School Rourkela (Grade: 86.33/100)

Odisha, India

ISC Science

2011

- Physics, Chemistry, Mathematics, English and Computer Applications

Ispat English Medium School Rourkela (Grade: 95.43/100)

Odisha, India

ICSE

2009

- Received 3rd rank in the class

Research Interests

EdTech, Artificial Intelligence in Education, Data Analytics, Computer Science

- Collaboration Analytics, Multimodal Learning Analytics, Learning Analytics, Technology Enhanced Learning, Natural Language Processing, Educational Data Science, Collaborative Learning, Educational Technology, Artificial Intelligence in Education, Learning Technology, Data Analytics

Publications

Learning Analytics and Knowledge (LAK 22) (Rank: CORE A)

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 (Impact Factor: 4.433)

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 (Impact Factor: 3.847)

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

H. Chen, E. Tan, Y. Lee, S. Praharaj, M. Specht and G. Zhao. *Developing AI into Explanatory Supporting Models: An Explanation-visualized Deep Learning Prototype for Computer Supported Collaborative Learning*

June 2020

- Assisted in the project with Center of Education and Learning, TU Delft and published this conference article

Learning Analytics and Knowledge (LAK 22) (Rank: CORE A)

Frankfurt, Germany (Online)

Y. Lee, H. Chen, E. Tan, S. Praharaj and M. Specht. *FLOWer: Feedback Loop for Group Work Supporter*

March 2020

- Assisted in the project with Center of Education and Learning, TU Delft and published this demo in the conference

International Conference on Multimodal Interaction (ICMI 19) ACM (Rank: CORE B)

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 (Rank: CORE B)

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

Computer Supported Collaborative Learning (CSCL 19) (Rank: CORE A)

Lyon, France

C. L. Teo, E. Koh, M. Scardamalia, J. Zhang, M. Chen, C. Chan, S. Praharaj, E. Tan and A. Ong. *Understanding New Assessment and Environment for Knowledge Building: Triangulating Features of Discourse Platform, Multimodal Learning Analytics and Text-based Learning Analytics*

June 2019

- Co-organized a workshop and published a article in the conference
- Did a live demo about my PhD research in the workshop

EC-TEL 2018 CEUR (Rank: CORE B)

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) (Rank: CORE B)

Leeds, UK

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

September 2018

- 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) (Rank: CORE B)

Bratislava, Slovakia

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

July 2017

- Analyzed the log data captured during all the 15 lectures for the paper to detect student attention profiles in the classroom which is also a part of my master thesis

DESOSA (Delft Students on Software Architecture)

TU Delft

Book Chapter on *Ember: A framework for creating ambitious web applications*

May 2016

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

Supervision and Teaching

Master Thesis students and course

Co-supervised and assisted in course implementation

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

Professional Activities

Invited research visit

Laval, France

Got invited for a research visit to present my research ideas in the Computer Science department of Laval University, France

July 2022

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

Lyon, 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

Creator of YouTube channel: SambitPhD

YouTube

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

October 2018 - Present

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

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

Referees

List of referees

- Prof. Dr. Maren Scheffel (Email ID)
- Prof. Dr. Hendrik Drachsler (Email ID)
- Prof. Dr. Marcus Specht (Email ID)

Address

Present and Permanent Address

- Present address: xxxx, Germany
- Permanent address: xxxx, India