# Mohamed Elgendi, PhD

Digital Medicine — AI for Healthcare — Wearables & Smart Textiles — Health Data Visualization

Google Scholar

## Professional Profile and Major Contributions

- Assistant Professor specializing in **AI-driven digital medicine**, biomedical signal processing, and wearable health technologies; former Deputy Director at ETH Zurich. Recognized for foundational contributions to photoplethysmography (PPG) analysis, cuffless cardiovascular assessment, machine-learning-enabled biosignal reconstruction, and privacy-preserving physiological sensing.
- Ranked **6,720th worldwide** in Stanford's Top 2% Scientists (2024) with **160+ peer-reviewed publications** and **9,500+ citations** (h-index 49). Authored a CRC Press textbook on PPG Signal Analysis. Core methodological papers on PPG/ECG cited hundreds of times, including foundational PPG work exceeding 1,600 citations.
- Introduced structured analytical frameworks for fingertip PPG and its derivatives, demonstrating strong correlations with ECG-derived heart rate variability and establishing methodological foundations for noninvasive cardiovascular assessment. Proposed the Optimal Signal Quality Index (SQI) and advanced feature extraction methods improving diagnostic reliability of wearable biosensors.
- Advanced cuffless blood pressure estimation by identifying key temporal PPG features (including b/a and d/a ratios) correlated with blood pressure states, contributing to scalable cardiovascular risk stratification using wearable devices.
- Developed machine learning frameworks for ECG/PPG transformation and reconstruction, enabling rich cardiovascular inference from ubiquitous sensors, and led research in remote photoplethysmography (rPPG), including privacy-aware physiological extraction methods supporting next-generation telehealth and computer-vision-based monitoring.
- Authored influential interdisciplinary reviews and methodological syntheses on ECG sonification and multimodal wearable analytics, clarifying research trends, identifying technical gaps, and guiding clinical translation in biomedical signal processing.
- Mentored **60+ students** progressing to PhD programs at MIT, Harvard, UPenn, ETH Zurich, Carnegie Mellon University, Auckland, Melbourne, and Hong Kong, with alumni now contributing globally to academia, industry (Google, Roche, Varian), and digital health startups.
- **2024–Present (Khalifa University, UAE):** Principal Investigator on Mubadala (AED 36,070) and CTL (AED 20,000) grants; published 24 papers in top 1–5% Scopus journals (2025); featured at Global Health Week Abu Dhabi (2025) demonstrating *CareX* to 1,000+ visitors; Invited Speaker at AdARRC 2024 (AI in Rheumatology); supervised award-winning MedBio Hackathon teams and Health 2.0 Young Achiever Award recipient.
- **2021–2024 (ETH Zurich, Switzerland):** Led translational research on contact and contactless biomedical sensing validated against clinical gold standards; designed and delivered graduate course *Wearable and Mobile Technologies of the Future*; supervised 25+ MSc/BSc theses and served as PhD examiner at EPFL; published 50 peer-reviewed articles; established ETH–Yale collaboration on non-invasive drug efficacy assessment; co-led COVID-19 speech diagnostics with Nobel Laureate Prof. Kurt Wüthrich; secured industry-supported PhD scholarships.
- **2014–2021 (University of British Columbia & International):** Publication Chair, IEEE CCECE 2018; keynote and invited talks at MIT, UCL, UBC, SFU, and Carnegie Mellon University; Associate Editor (*Physiological Measurement*, *npj Biosensing*); reviewer for Nature Medicine, Nature Communications, npj Digital Medicine, IEEE TBME; Outstanding Achievement Award (BC Children's Hospital, 2018); Nature Index Featured Researcher (2019); Top 10% Most Cited Paper (*PLOS ONE*, 2017); led signal processing for $23M Gates Foundation global health initiative (Mozambique, India, Pakistan).
- **Early Career (Singapore & Australia):** Awarded Australian PhD Scholarship; secured Seed Grant (SG$20,000) from NTU Institute of Media Innovation (IMI); presented EEG diagnostic tool to Singapore's Minister of Health (2011), featured for five years at Singapore Science Centre.

## Translational Impact and Patents

- Dr. Elgendi's work has informed intellectual property adopted by industry, demonstrating translation from biomedical signal processing to deployable healthcare technologies.
- **Representative patents referencing Dr. Elgendi's work:**
  - EP3672474A1 — A method of detecting abnormalities in ECG signals (Current Assignee: Cambridge Heartwear Ltd).
  - US9642578B2 — System and method for health monitoring using a non-invasive, multi-band biosensor (Current Assignee: Trilinear Bioventures LLC).
  - US10799122B2 — Utilizing correlations between PPG and iPPG signals to improve detection of physiological responses (Current Assignee: Facense Ltd).
  - US11103140B2 — Monitoring blood sugar level with a comfortable head-mounted device (Current Assignee: Facense Ltd).
  - US9241646B2 — System and method for determining stroke volume of a patient (Current Assignee: Covidien LP / Medtronic).
- **Technology domains:** multi-band optical biosensors; correlation-based PPG/iPPG analytics; non-invasive cardiovascular and glucose monitoring.

## IEEE Contributions and Professional Service

- **IEEE Conference Leadership:** Publication Chair, IEEE Canadian Conference on Electrical and Computer Engineering (CCECE 2018); Keynote Speaker, IEEE BioSMART Conference (Dubai); author and presenter of peer-reviewed papers at IEEE EMBS, IEEE GlobalSIP, IEEE BioCAS, and related IEEE venues.
- **IEEE Journals and Peer Review:** Regular reviewer for IEEE Transactions on Biomedical Engineering (TBME) and IEEE-affiliated journals; author of multiple IEEE Access publications in biomedical signal processing and wearable health analytics.
- **Professional Engagement within IEEE Community:** Active contributor to IEEE Engineering in Medicine and Biology Society (EMBS) conferences through technical papers, invited talks, and student mentorship; long-term engagement in IEEE-sponsored research dissemination in biosignal processing, machine learning, and digital health.
- **Capacity Building:** Supervised and mentored students publishing in IEEE conferences and journals, many of whom progressed to PhD programs and engineering roles in healthcare technology.

## Employment

| | | |
|---|---|---|
| 2024–present | Assistant Professor | Khalifa University, UAE |
| 2021–2024 | Deputy Director & Lecturer | ETH Zurich, Switzerland |
| 2018–2021 | Research Assistant | Simon Fraser University, Canada |
| 2014–2021 | Postdoctoral Fellow | University of British Columbia, Canada |
| 2012–2014 | Postdoctoral Fellow | University of Alberta, Canada |
| 2010–2012 | Research Associate | Nanyang Technological University, Singapore |
| 2006–2012 | Research Engineer | Charles Darwin University, Australia |

## Academic Metrics

- Google Scholar: h-index 49, i10-index 119, >9700 citations
- ResearchGate Reads >279,000; Recommendations: 295
- Journal publications: 110  Conference papers: 24  Book chapters: 4
- Single-author: 13  First-author: 61  Last-author: 26
- Academic Book (Amazon #153 Biotechnology Textbooks)
- Patents: 1
- **Supervision:** 2 Postdocs — 2 PhD (direct) — 3 PhD (co-supervised) — 67 MSc/BSc theses

## Education

**PhD Biomedical Engineering**, Charles Darwin University, Australia (2006–2012)
Thesis: Event Detection in ECG and APG Signals
Examiners: Prof. Gari Clifford (Oxford), Prof. Nigel Lovell (UNSW)

## Honors and Awards (Selected)

- Certificate of Appreciation, Khalifa University (Center for Teaching and Learning), 2025 — for tutoring and educational support.
- Nominated for Tier II Canada Research Chair (CRC), 2020 (nationally competitive)
- Distinguished Professor, Guilin Technological University (2019)
- Outstanding Achievement Award, BC Children's Hospital (2018)
- Senior Fellow, Brain Sciences Foundation (2019)
- Star Alumnus, Charles Darwin University (2016)
- Multiple international scholarships (MIT, UK, Austria, Germany)

## Teaching Experience (Summary)

- ETH Zurich: Wearable and Mobile Technologies
- UBC: Digital Health, Data Visualization, Biomedical signal Processing
- University of Alberta: Statistics
- NTU Singapore: Biomedical Signal Processing
- Charles Darwin University: Statistics, Vibrations

## Editorial and Academic Service

- Judge, ADNOC Group *STEM for Life: Future of AI Schools Challenge 2025*, UAE.
- Editorial Board: npj Biosensing; Physiological Measurement
- Former Associate Editor: Biomedical Signal Processing and Control
- Guest Editor: Frontiers in Digital Health
- Reviewer: Nature Medicine, Scientific Reports, IEEE TBME, PLOS ONE
- Chair/PC member for IEEE and international conferences

## Student Supervision and Mentorship

*All students listed below were supervised under the **main supervision of Dr. Mohamed Elgendi**.*

- **Vera Birrer** — M.Sc. Researcher *Conducted Master's research on wearable physiological sensing and digital health analytics, contributing to peer-reviewed outputs. She transitioned to industry and is currently a Hardware Development Engineer at Varian (Oct 2023–present), working on advanced medical technology systems.*
- **Luca Terraneo** — Graduate Researcher (Mechanical Engineering) *Contributed to biomedical engineering and wearable health technology projects. Following ETH, he moved into industry and currently works in Switzerland as a Mechanical/Hardware Engineer, with prior experience at Roche.*
- **Emilie Rolland-Piègue** — M.Sc. Researcher *Completed research on smartphone camera–based blood pressure classification integrating machine learning and physiological signal analysis. Subsequently held Data Scientist and ML Engineer internships at FPT Japan and Swiss Life, contributing to causal inference and applied ML pipelines.*
- **Karmen Markov** — M.Sc. Researcher *Focused on interpretable machine learning for wearable biosignals. She later co-founded CoNurse and currently serves as Co-Founder and Chief Product Officer, leading ML-driven digital health innovation and securing over €2.1M in European R&D funding.*
- **Syrine Ghrabli** — M.Sc. Researcher (co-supervised with Prof. Carlo Menon) *Co-authored publications on machine-learning analysis of cough sounds for respiratory disease detection. She is*

*currently a PhD student at the University of Melbourne, conducting interdisciplinary biomedical modeling research.*

- **Kirina van der Bijl** — M.Sc. Student (2022) *Completed her thesis on machine-learning-based biosignal quality assessment. She subsequently worked as a Data Scientist at TNO and Junior Data Engineer at Datalab, and is currently a Software Engineer at TandemDrive developing LLM-based enterprise systems.*
- **Tristan Stampfler** — M.Sc. Student (2022) *Developed a smartphone-based deep-learning fall detection system. He is currently a Software/Machine Learning Engineer at Google (YouTube, Zürich), working on large-scale ML systems.*
- **Fridolin Haugg** — Visiting M.Sc. Student (from KIT) *Worked on remote blood pressure estimation from selfie videos. He is currently a PhD student in Artificial Intelligence in Medicine at Harvard Medical School, collaborating with Dana-Farber and Brigham and Women's Hospital.*
- **Lorenz Frey** — M.Sc. Student (Mechanical Engineering) *Trained in control systems and engineering design. He later transitioned into AI-driven engineering and international cooperation and is currently a Candidate at the Swiss Federal Department of Foreign Affairs.*
- **Lou Ancillon** — M.Sc. Researcher *Led research on machine-learning-based anxiety detection using ECG and respiration, resulting in a first-author systematic review in Diagnostics. She later completed a Bioinformatics Master's thesis at Harvard Medical School developing transformer models for suicide-risk prediction from EHRs, and is currently a Machine Learning Engineer at Lifen (Paris).*
- **Lalida Sutejitsiri** — M.Sc. Student (2021–2022) *Worked on smart kiosk COVID-19 screening and face detection. She is currently a PhD candidate in Bioengineering at the University of Auckland, focusing on AI-based imaging for lymphoedema following cancer treatment.*
- **Anxing Zhao** — M.Sc. Student *Completed research on predicting acute hypotensive episodes. She later transitioned into healthcare analytics leadership and is currently Senior Manager of Analytics and Forecasting at Horizon (Switzerland), following roles at Roche, Medtronic, and Shire.*
- **Hugo Leca** — M.Sc. Student (Mechanical Engineering) *Worked on biomedical sensing prototypes and ML-enabled software systems. He is currently a Visiting Research Scientist at MIT Media Lab, researching implantable nano-devices and brain–machine interfaces.*
- **Hangyu Liu** — M.Sc. Student (2022) *Conducted research on non-invasive anxiety detection using biosignals, contributing to systematic reviews on wearable mental health monitoring.*
- **Rodrigo Castellano Ontiveros** — M.Sc. Student (co-supervised with Prof. Carlo Menon) *Developed machine-learning methods for remote photoplethysmography from video. He is currently a Marie Skłodowska–Curie PhD Fellow at the University of Siena, working on neural–symbolic and explainable AI.*

### Mentorship Outcomes and Impact

- Supervised and mentored **40+ undergraduate and Master's students** across ETH Zürich, Khalifa University, UBC, and NTU.
- Alumni teach, research, and innovate globally, progressing to PhD programs (Harvard Medical School, University of Melbourne, University of Auckland), senior industry roles (Google, Varian, Roche), startups (CoNurse), and public-sector leadership.
- Mentorship emphasized methodological rigor, reproducibility, physiologically grounded machine learning, and translation of biomedical research into clinical and industrial impact.

## Invited Talks and Keynotes

- **2025 – Abu Dhabi, UAE** Invited Speaker: Artificial Intelligence Academy (AdARRC 2025), *Machine Learning and AI in Rheumatology.*
- **2025 – Khalifa University, UAE** Invited seminars and guest lectures on AI-driven digital health, wearable sensing, and biomedical signal processing (College of Medicine and Health Sciences; Biomedical Engineering Program).
- **2023–2024 – ETH Zurich, Switzerland** Invited academic seminars and guest lectures on wearable health technologies, digital medicine, and biomedical signal processing within the Biomedical and Mobile Health Technology Lab and affiliated departments.

- **2024 – Dubai, UAE** Invited Speaker: Artificial Intelligence Academy (AdARRC 2024), *Machine Learning and AI in Rheumatology.*
- **2020 – Concordia University, Canada** Guest Lecture: *AI in Healthcare* (QC, Canada).
- **2019 – IEEE Vancouver Section, Canada** Keynote: *Digital Health Challenges* (BC, Canada).
- **2019 – Fraser Health, Canada** Keynote: *Data Visualization* (BC, Canada).
- **2019 – Faculty of Medicine, University of British Columbia, Canada** Keynote: *Data Visualization* (BC, Canada).
- **2019 – Vancouver Coastal Health, Canada** Keynote: *Digital Health Challenges* (BC, Canada).
- **2018 – 20th International Research Conference, Canada** Keynote: *Blood Pressure Evaluation* (BC, Canada).
- **2018 – University of British Columbia, Canada** Guest Lecture: *Data Visualization*, Department of Obstetrics (BC, Canada).
- **2018 – St. Paul's Hospital, Canada** Guest Lecture: *Hypertension in Pregnancy* (BC, Canada).
- **2018 – BC Women's Research Institute, Canada** Guest Lecture: *Hypertension Assessment* (BC, Canada).
- **2018 – University of Saskatchewan, Canada** Guest Lecture: *Signals: New Perspectives*, Department of Computer Science (SK, Canada).
- **2017 – BC Children's Hospital, Canada** Guest Lecturer: *Data Visualization I & II* (six invited sessions) (BC, Canada).
- **2017 – BC Centre for Heart Lung Innovation, St. Paul's Hospital, Canada** Guest Lecture: *Data Visualization* (BC, Canada).
- **2017 – Massachusetts Institute of Technology, USA** Guest Lectures: *Data Visualization*, MIT D-Lab and Graduate Programs (MA, USA).
- **2017 – Carnegie Mellon University, Qatar** Guest Lecture: *Data Visualization*, Biological Sciences.
- **2017 – Texas A&M University, Qatar** Guest Lecture: *Data Visualization*, School of Engineering.
- **2017 – University College London, Qatar Campus** Guest Lecture: *Data Visualization*, School of Social Studies.
- **2017 – Simon Fraser University, Canada** Guest Lectures: *Data Visualization* (School of Science) and *Data Analysis* (School of Engineering).
- **2017 – University of British Columbia, Canada** Guest Lecture: *Data Visualization*, School of Engineering.
- **2017 – Government of British Columbia, Canada** Guest Lectures: *Data Visualization* for BC Ministry of Health, BC Innovation Council, and Michael Smith Foundation for Health Research.
- **2016 – Rowan University, USA** Guest Lecture: *Biosignals and Mobile Health*, Henry M. Rowan College of Engineering (NJ, USA).
- **2016 – University of Toronto, Canada** Guest Lecture: *Biosignals and Mobile Health*, Toronto Rehabilitation Institute (ON, Canada).
- **2016 – IEEE BioSMART Conference, Dubai, UAE** Keynote: *Biosignals and Mobile Health.*
- **2015 – Georgia Tech & Emory University, USA** Guest Lecture: *Cardiac Waveform Analysis* (GA, USA).
- **2015 – Massachusetts Institute of Technology, USA** Guest Lecture: *Health Data Analysis*, MIT D-Lab (MA, USA).
- **2015 – Universidad Autónoma del Estado de México, Mexico** Keynote: *Data Analysis and Mobile Health.*
- **2015 – University of Queensland, Australia** Guest Lecture: *Behavioral Data Analysis*, School of Psychology.
- **2009 – Massachusetts Institute of Technology, USA** Guest Lecture: *ECG Signal Analysis*, Computational Physiology Laboratory (MA, USA).

## Research Funding and Strategic Partnerships

### Since joining KU (2024–present)

- **Mubadala Research Grant**: AED 36,070 *"Visualization of ECG and PPG Signals for Intuitive Diagnosis"*.
- **CTL Grant**: AED 20,000 *"Ethical AI for Courses in Human Movement and Biosignals"*.

### International Multi-Partner Program (2019–2022)

Established and led a coordinated international research program supported by academic and industrial partners across Europe, North America, Asia, and Latin America. This initiative enabled sustained PhD training, clinical data collection, and translational AI development in digital health.

- **University of Oxford, UK** — Prof. Newton Howard Committed CA$15,000 per year for five years to support PhD student salary, publication fees (CA$2,000/year), annual research visits to Oxford, data collection, and patent-related expenses.
- **Massachusetts Institute of Technology (MIT), USA** — Prof. Raed Shubair Committed CA$25,000 per year for five years to support PhD exchange (US$20,000 per student per year) and publication costs (US$5,000/year).
- **Rowan University, USA** — Prof. Nidhal Carla Bouayana (Professor and Associate Dean for Research) Provided clinical data access via Cooper Hospital (New Jersey) and co-development of grant proposals.
- **University of British Columbia, Canada** — Prof. Rabab Ward (Emeritus Professor) Committed up to CA$15,000 per year toward PhD student support (total CA$75,000) and CA$2,000 toward publication costs.
- **CINVESTAV–Monterrey, Mexico** — Prof. Dania Ruiz Funded one graduate student annually and enabled clinical data collection from local hospitals, with joint grant development.
- **Amrita University, India** — Prof. Shine Kumar Supported clinical data collection through Amrita Institute of Medical Sciences (Kerala) and collaborative grant writing.
- **Guilin University of Technology, China** — Prof. Zhengcheng Chen (Dean, School of Engineering) Committed CA$50,000 per year for five years to support two PhD students (US$20,000 per student annually), publication fees (US$5,000/year), and covered annual travel and accommodation for collaborative visits.
- **Ericsson Telecom (Sweden)** Industrial partner contributing through the Oxford collaboration, supporting applied AI and digital health translation.

### Competitive Research Grants and Fellowships (2006–2020)

- **Clinical & Translational Research Seed Grant**, BC Children's Hospital Research Institute (PI), Canada, 2019–2020 — CA$10,000
- **Center for Research and Advanced Studies (CINVESTAV)** (Co-Applicant), Mexico, 2018 — US$10,000
- **Healthy Behavior Data Challenge Phase II**, Canadian Institutes of Health Research (Co-Applicant), Canada, 2018–2019 — CA$25,000
- **Healthy Behavior Data Challenge Phase I**, Canadian Institutes of Health Research (Co-Applicant), Canada, 2017–2018 — CA$10,000
- **BC Children's Hospital Trainee Sponsorship** (PI), Canada, 2017 — CA$500
- **Guangxi Zhuang Autonomous Region Funding** (Co-Applicant), China, 2017–2018 — US$25,000
- **Clinical & Translational Research Seed Grant**, BCCHR (PI), Canada, 2017–2018 — CA$5,000
- **Shimmer Sensing Industry Sponsorship**, USA, 2016–2018 — US$3,000
- **Mining for Miracles Fellowship** (PI), University of British Columbia, Canada, 2016–2017 — CA$80,000
- **Cardiovascular Medical Research and Education Fund** (Co-Applicant), USA, 2014 — US$75,000
- **Alberta Innovates Centre for Machine Learning Fellowship** (PI), Canada, 2013–2014 — CA$55,000

- **Institute of Media Innovation Seed Grant** (Co-Investigator), Singapore, 2010–2012 — SG$20,000
- **Australian Postgraduate Research Scholarship** (PI), Australia, 2006–2010 — AUS$100,000
- **Charles Darwin University Postgraduate Scholarship** (PI), Australia, 2006–2010 — AUS$60,000

## Media Engagement and Public Impact

- **2025 — Khalifa University (UAE)** Public demonstration of *CareX*, an AI-powered digital health kiosk, during Global Health Week Abu Dhabi. Showcased translational research to over 1,000 visitors and featured in Khalifa University communications.
- **2024 — Khalifa University (UAE)** Coverage of student-led digital health innovations and wearable technologies, including award-winning projects from the MedBio Hackathon and Young Achiever Award recipients.
- **2023 — ETH Zurich (Switzerland)** *A simple way to tell the difference between moments that cause anxiety and moments that don't, using portable devices.* ETH Zurich News (Editors' Choice)
- **2020 — University of British Columbia (Canada)** *Speeding up COVID-19 testing with artificial intelligence.* UBC Engineering News
- **2019 — Nature Index** *Five features of a highly cited article.* Nature Index News
- **2019 — University Affairs** *Six tips to achieve a highly cited article.* University Affairs
- **2018 — University of British Columbia News** *New China and US studies back use of pulse oximeters for assessing blood pressure.* UBC News
- **2018 — Institution of Engineering and Technology (IET)** *Researchers develop algorithm to back use of pulse oximeters for blood pressure assessment.* IET Engineering & Technology
- **2018 — Faculty of Medicine, UBC** *New research backs use of pulse oximeters for assessing blood pressure.* UBC Faculty of Medicine
- **2017 — Charles Darwin University (Australia)** Star Alumnus Feature. CDU Alumni
- **2016 — Charles Darwin University** *Canadian university honours CDU graduate.* CDU News
- **2011 — Charles Darwin University** *New tool in the fight against Alzheimer's.* CDU News
- **2011 — Nanyang Technological University (Singapore)** *EEG Virtual Reality for Diagnosis of Alzheimer's Disease.* NTU News
- **2009 — Northern Territory News** *Charles Darwin student gets to the heart of matter.* NT News
- **2009 — Charles Darwin University** *Mohamed Elgendi presents research at Harvard and MIT.* CDU News
- **2008 — Charles Darwin University** *Mohamed Elgendi talks at Stanford.* CDU News
- **2007 — Charles Darwin University** *Mohamed Elgendi journeys to MIT.* CDU News

## Book

1. M. Elgendi, *PPG Signal Analysis: An Introduction Using MATLAB®*. CRC Press, 2020.

## Patent

1. N. Howard, M. Elgendi, Y. Liang, Z. Chen, R. Ward, Method and appartus for hypertension classification, US Patent App. 16/589,612, no. 20200107737, 2020. [Granted]

## Editorials

1. M. Elgendi, et al. "Editorial on Mobile and wearable systems for health monitoring" *Frontiers in Digital Health* (5) 2023.
2. A.H. Khandoker, .., M. Elgendi, et al. "Editorial on Methods and Applications in Computational Physiology and Medicine" *Frontiers in Physiology* (8) 2022. [Impact Factor: 4.755]

## Journal Publications

1. M. Elgendi, K. Markov, H. Liu, M. De Vos, K. Khalaf, A. Khandoker, H. F. Jelinek, et al., "Wearable devices for anxiety assessment: a systematic review," *Communications Medicine*, 6(1), 20, 2026.
2. M. Elgendi, A. Elkhalifa, M. Alshehhi, E. Almarri, K. Khalaf, A. Khandoker, et al., "ECG sonification methods for robust and generalizable clinical decision support," *npj Digital Medicine*, 2025.
3. M. Papaefstathiou, M. Elgendi, C. Menon, "Author Correction: Balancing sensitivity and integration in capacitive pressure sensors for textile-based health monitoring," *npj Biosensing*, 2(1), 46, 2025.
4. M. Elgendi, A. Yu, S. Bhutani, C. Menon, "Balancing cardiac privacy with quality in video recordings," *Communications Medicine*, 5(1), 486, 2025.
5. M. Papaefstathiou, M. Elgendi, C. Menon, "Balancing sensitivity and integration in capacitive pressure sensors for textile-based health monitoring," *npj Biosensing*, 2(1), 40, 2025.
6. B. Khan, R. T. Khalid, U. Amara, N. Imdad, M. H. Masrur, M. Awais, A. Q. Laghari, et al., "Electrospun nanofibers for wearable cardiovascular health monitoring," *Journal of Science: Advanced Materials and Devices*, 101030, 2025.
7. H. F. Jelinek, M. P. Johnson, F. B. Khan, M. Elgendi, M. A. Ayoub, "Temporal complexity of LVV-hemorphin-7 allosterism at the angiotensin II type 1 receptor assessed using entropy-based approaches," *Computational and Structural Biotechnology Journal*, 2025.
8. K. Markov, M. Elgendi, C. Menon, "Evaluating the performance of wearable EEG sleep monitoring devices: a meta-analysis approach," *Nature Biomedical Innovations*, 2(1), 33, 2025.
9. M. Bondarenko, C. Menon, M. Elgendi, "Demographic bias in public remote photoplethysmography datasets," *Nature Digital Medicine*, 8(1), 593, 2025.
10. A. F. Hamad, B. A. Monchka, J. M. Bolton, L. L. Roos, M. Elgendi, L. M. Lix, et al., "Leveraging multigenerational health data to enhance mental disorder risk prediction: a population-based cohort study," *BMC Psychiatry*, 25(1), 862, 2025.
11. M. Bondarenko, C. Menon, M. Elgendi, "The role of face regions in remote photoplethysmography for contactless heart rate monitoring," *Nature Digital Medicine*, 8(1), 1–12, 2025.
12. K. Markov, M. Elgendi, V. Birrer, C. Menon, "Interpretable feature-based machine learning for automatic sleep detection using photoplethysmography," *Nature Biosensing*, 2(1), 1–15, 2025.
13. S. Bhutani, M. Elgendi, C. Menon, "Preserving privacy and video quality through remote physiological signal removal," *Nature Communications Engineering*, 4(1), 66, 2025.
14. S. Bhutani, A. Alian, R. R. Fletcher, H. Bomberg, U. Eichenberger, C. Menon, M. Elgendi, et al., "Vital signs-based healthcare kiosks for screening chronic and infectious diseases: a systematic review," *Nature Communications Medicine*, 5(1), 28, 2025.
15. M. Elgendi, F. Haugg, R. R. Fletcher, J. Allen, H. Shin, A. Alian, C. Menon, "Recommendations for evaluating photoplethysmography-based algorithms for blood pressure assessment," *Communications Medicine*, 4(109), 2024.
16. M. Elgendi, E. Jost, A. Alian, R. R. Fletcher, H. Bomberg, U. Eichenberger, C. Menon, "Photoplethysmography Features Correlated with Blood Pressure Changes," *Diagnostics*, 14(20), 2309, 2024. https://doi.org/10.3390/diagnostics14202309
17. R. Castellano Ontiveros, M. Elgendi, C. Menon, "A machine learning-based approach for constructing remote photoplethysmogram signals from video cameras," *Communications Medicine*, 4(109), 2024.
18. A. F. Hamad, B. A. Monchka, J. M. Bolton, O. Plana-Ripoll, L. L. Roos, M. Elgendi, et al., "The Intergenerational Transfer of Mental Disorders: A Population-Based Multigenerational Linkage Study," *The Canadian Journal of Psychiatry*, 07067437241255096, 2024. [Impact Factor: 4.6]
19. S. Li, **M. Elgendi**, C. Menon, "Optimal facial regions for remote heart rate measurement during physical and cognitive activities," *npj Cardiovascular Health*, 2024. :contentReference[oaicite:7]index=7
20. K. Markov, **M. Elgendi**, C. Menon, "EEG-based headset sleep wearable devices," *npj Biosensing*, 2024.
21. L. N. Lyzwinski, M. Elgendi, C. Menon, "Users' Acceptability and Perceived Efficacy of mHealth for Opioid Use Disorder: Scoping Review," *JMIR mHealth and uHealth*, 12, e49751, 2024. [Impact Factor: 5.0]
22. V. Birrer, M. Elgendi, O. Lambercy, C. Menon, "Evaluating reliability in wearable devices for sleep

staging," *npj Digital Medicine*, 7(1), 74, 2024. [Impact Factor: 15.2]

23. L. Lyzwinski, M. Elgendi, C. Menon, "Innovative Approaches to Menstruation and Fertility Tracking Using Wearable Reproductive Health Technology: Systematic Review," *Journal of Medical Internet Research*, 26, e45139, 2024. [Impact Factor: 7.4]
24. S. Ghrabli, M. Elgendi, C. Menon, "Identifying unique spectral fingerprints in cough sounds for diagnosing respiratory ailments" *Scientific Reports*, 14(1) 2024. [Impact Factor: 4.6]
25. V. Cecchini, L. Nyirö, L. Gorrell, P. Schweinhardt, C. Menon, M. Elgendi, "Variability and repeatability of spinal manipulation force–time characteristics in the thoracic spine on a manikin," *Chiropractic & Manual Therapies*, 32, 34, 2024.
26. M. Elgendi, K. van der Bijl, C. Menon, "An Open-Source Graphical User Interface-Embedded Automated Electrocardiogram Quality Assessment: A Balanced Class Representation Approach" *Diagnostics*, 13(22) 2023 [Impact Factor: 3.9]
27. M. Elgendi, V. Cecchini, L. Nyirö, L. Gorrell, P. Schweinhardt, C. Menon, "Analysis of Force Profile Features in Spinal Manipulation Therapy" *IEEE Access* 11 2023. [Impact Factor: 3.9]
28. R. C. Ontiveros, M. Elgendi, G. Missale, C. Menon, "Evaluating RGB Channels in Remote Photoplethysmography: A Comparative Study with Contact-Based PPG" *Frontiers in Physiology*, 14, 2023.. [Impact Factor: 4.0]
29. P.H. Charlton, J. Allen, R. Bailon, S. Baker, J.A. Behar, F. Chen, G.D. Clifford, ... M. Elgendi,.., "The 2023 wearable photoplethysmography roadmap" *Physiological Measurement* 2023. [Impact Factor: 2.6]
30. M. Elgendi, et al., "Revolutionizing smartphone gyrocardiography for heart rate monitoring: overcoming clinical validation hurdles" *Frontiers in Cardiovascular Medicine* 10 (2023). [Impact Factor: 5.8]
31. M. Elgendi, et al., "Recommendations for Evaluating Photoplethysmography-based Blood Pressure Models" *Communications Medicine* 3 (59) 2023.
32. L. Lyzwinski, M. Elgendi, C. Menon, "Innovative Approaches to Menstruation and Fertility Tracking: A Review of Wearable Reproductive Health Technology" *Journal of Medical Internet Research* 2023. [Impact Factor: 7]
33. L. Lyzwinski, M. Elgendi, A. Shokurov, T. Cuthbert, C. Ahmadizadeh, C. Menon, "Opportunities and challenges for sweat-based monitoring of metabolic syndrome via wearable technologies" *Communications Engineering* 1 2023.
34. L. Lyzwinski, M. Elgendi, C. Menon, "Conversational Agents and Avatars for Cardiometabolic Risk Factors and Lifestyle-Related Behaviors: Scoping Review" *JMIR mHealth and uHealth* 10 2023. [Impact Factor: 4.95]
35. L. Lyzwinski, M. Elgendi, C. Menon, "The Use of Photoplethysmography in the Assessment of Mental Health: Scoping Review" *JMIR Mental Health* 11 (1) 2023. [Impact Factor: 6.33]
36. Q. Tang, Z. Chen, R. Ward, C. Menon, M. Elgendi, "PPG2ECGps: An End-to-End Subject-Specific Deep Neural Network Model for Electrocardiogram Reconstruction from Photoplethysmography Signals without Pulse Arrival Time Adjustments" *Bioengineering* 10 (6) 2023. [Impact Factor: 5.046]
37. M. Bedaiwy, .., M. Elgendi, et al., "Prevalence, causes, and impact of non-visualized pregnancy losses in a recurrent pregnancy loss population" *Human Reproduction* 2023. [Impact Factor: 6.353]
38. T. Stampfler, M. Elgendi, R. Fletcher and C. Menon, "The Use of Deep Learning for Smart Phone-based Human Activity Recognition" *Frontiers in Public Health* 11 2023. [Impact Factor: 6.461]
39. X. Hu, S. Yin, X. Zhang, C. Menon, C. Fang, Z Chen, M. Elgendi, Y Liang, "Blood Pressure Stratification Using Photoplethysmography and Light Gradient Boosting Machine" *Frontiers in Physiology* 14 2023. [Impact Factor: 4.755]
40. F. Haugg, M. Elgendi, C. Menon, "GRGB rPPG: An Efficient Low-Complexity Remote Photoplethysmography-Based Algorithm for Heart Rate Estimation" *Bioengineering* 10 (2) 2023. [Impact Factor: 5.046]
41. M. Chao, C. Menon, M. Elgendi, "Effect of COVID-19 Vaccination on the Menstrual Cycle" *Frontiers in Medicine* 9 2022. [Impact Factor: 5.058]
42. F. Ritsert, M. Elgendi, C. Menon, "Heart and Breathing Rate Variations as Biomarkers for Anxiety Detection" *Bioengineering* 9 (11) 2022. [Impact Factor: 5.046]
43. K. Van der Bijl, M. Elgendi, C. Menon, "Automatic ECG quality assessment techniques: A system-

atic review" *Diagnostics* 12 (9) 2022. [Impact Factor: 3.992]

44. T. Stampfler, M. Elgendi, R.R. Fletcher, C. Menon, "Fall detection using accelerometer-based smartphones: Where do we go from here?" *Frontiers in Public Health* 10 2022. [Impact Factor: 6.461]
45. F. Haugg, M. Elgendi, C. Menon, "Effectiveness of Remote PPG Construction Methods: A Preliminary Analysis" *Bioengineering* 9 (10) 2022. [Impact Factor: 5.046]
46. M. Elgendi, V. Galli, C. Ahmadizadeh, C. Menon, "Dataset of Psychological Scales and Physiological Signals Collected for Anxiety Assessment Using a Portable Device " *Data* 7 (9), 2022. [Impact Factor: 2.2]
47. S. Ghrabli, M. Elgendi, C. Menon, "Challenges and Opportunities of Deep Learning for Cough-Based COVID-19 Diagnosis: A Scoping Review" *Diagnostics* 12 (9) 2022. [Impact Factor: 3.992]
48. A. Zhao, M. Elgendi, C. Menon, "Machine Learning for Predicting Acute Hypotension: A Systematic Review" *Frontiers in Cardiovascular Medicine* (9) 2022. [Impact Factor: 5.846]
49. Q. Tang, Z. Chen, R. Ward, C. Menon, M. Elgendi, "Subject-Based Model for Reconstructing Arterial Blood Pressure from Photoplethysmogram" *Bioengineering* 9 (8) 2022. [Impact Factor: 5.046]
50. B. Sivajohan, M. Elgendi, C. Menon, C. Allaire, P. Yong, M.A. Bedaiwy, " Clinical use of artificial intelligence in endometriosis: a scoping review " *npj Digital Medicine* 5 (1), 1-17 2022. [Impact Factor: 15.2]
51. M. Chao, C. Menon, M. Elgendi, "Menstrual Cycles During COVID-19 Lockdowns: A Systematic Review and Meta-Analysis" *Frontiers in Reproductive Health* 2022.
52. L. Ancillon, M. Elgendi, C Menon, "Machine Learning for Anxiety Detection Using Biosignals: A Review" *Diagnostics* 12 (8) 2022. [Impact Factor: 3.992]
53. L. Frey, C. Menon, M. Elgendi, "Blood Pressure Measurement using Only a Smartphone" *npj Digital Medicine* 5 (1), 1-14 2022. [Impact Factor: 15.357]
54. M. Chao, C. Menon, M. Elgendi, "Ranking of the Most Common Maternal COVID-19 Symptoms: A Systematic Review" *Frontiers in Medicine* 2 2022. [Impact Factor: 5.058]
55. L. Kramer, C. Menon, M. Elgendi, "ECGAssess: A Python-based Toolbox to Assess ECG Lead Signal Quality" *Frontiers in Digital Health* 4 (847555) 2022.
56. L. Blum, M. Elgendi, C. Menon, "Impact of Box-Cox Transformation on Machine-Learning Algorithms" *Frontier in Artificial Intelligence* 5 (877569) 2022.
57. F. Haugg, M. Elgendi, C. Menon, "Assessment of Blood Pressure Using Only a Smartphone and Machine Learning Techniques: A systematic Review" *Frontiers in Cardiovascular Medicine.* [Impact Factor: 5.846]
58. F. Sinaki, R. Ward, D. Abbott, J. Allen, R. Fletcher, C. Menon, M. Elgendi, "Racial Disparities in Publicly-available Pulse Oximetry Databases" *Communications Medicine* (2) 2022.
59. M. Chao, C. Menon, M. Elgendi, "Robust Reconstruction of Electrocardiogram Using Photoplethysmography: A Subject-based Model" *Frontiers in Physiology* (8) 2022. [Impact Factor: 4.755]
60. M. Chao, C. Menon, M. Elgendi, "Validity of Apgar score as an indicator of neonatal SARS-CoV-2 infection: A scoping Review" *Frontiers in Medicine* (8) 2022. [Impact Factor: 5.058]
61. M. Elgendi, R. Fletcher, H. Tomar, J. Allen, R. Ward, C. Menon, "The Striking Need for Age Diverse Pulse Oximeter Databases" *Frontiers in Medicine* (8) 2022. [Impact Factor: 5.058]
62. J. Allen, D. Zheng, P. A. Kyriacou, M. Elgendi, "Photoplethysmography (PPG): State-of-the-art Methods and Applications," *Physiological Measurement* (10) 2021. [Impact Factor: 2.688]
63. T. Qenfung, Z. Chen, C. Menon, R. Ward, M. Elgendi, "PPGTempStitch: A MATLAB Toolbox for Augmenting Annotated Photoplethsmogram Signals," *Sensors* (21) 2021. [Impact Factor: 3.847]
64. E. Mejía-Mejía, J. May, M. Elgendi, and P. Kyriacou, "Classification of Blood Pressure in Critically Ill Patients Using Photoplethysmography and Machine Learning," *Computer Methods and Programs in Biomedicine* 208 2021. [Impact Factor: 7.027]
65. E. Mejía-Mejía, J. May, M. Elgendi, and P. Kyriacou, "Differential effects of the blood pressure state on pulse rate variability and heart rate variability in critically ill patients," *npj Digital Medicine* 4, 2021. [Impact Factor: 15.357]
66. M. Elgendi, M. Nasir, T. Quenfeng, D. Smith, J.P. Grenier, C. Batte, B. Spieler, W. D. Leslie, C. Menon, R. R. Fletcher, N. Howard, R. Ward, W. Parker, S. Nicolaou, "Augmentation in Deep Learning Networks for Detecting COVID-19: A Geometric Transformation Perspective," *Frontiers in Medicine* 8 (2021). [Impact Factor: 5.058]

67. Y. Liang, A. Hussain, D. Abbott, C. Menon, R. Ward, M. Elgendi, "Impact of Data Transformation: An ECG Heartbeat Classification Approach," *Frontiers in Digital Health* 2 (2020)
68. S. Huthart, M. Elgendi, D. Zheng, G. Stansby, J. Allen, "Advancing PPG signal quality and know-how through knowledge translation-from experts to student and researcher," *Frontiers in Digital Health* 2 (2020)
69. M. Elgendi, Z. Chen, C. Allaire, C. Williams, M. A. Bedaiwy and P. J. Yong, "Machine-learning-revealed New Correlates with Chronic Pelvic Pain in Women," *Frontiers in Digital Health* 2 (2020).
70. K. Bird, G. Chan, H. Lu, H. Greeff, J. Allen, D. Abbott, C. Menon, N. H. Lovell, W. Chan, R. R. Fletcher, A. Alian, R. Ward and M. Elgendi, "Assessment of Hypertension Using Clinical Electrocardiogram Features: A First-Ever Review," *Frontiers in Medicine* 7 (2020). [Impact Factor: 5.058]
71. T. Qenfung, Z. Chen, J. Allen, A. A. Alian, C. Menon, R. Ward, M. Elgendi, "PPGSynth: An Innovative Toolbox for Synthesizing Regular and Irregular Photoplethysmography Waveforms," *Frontiers in Medicine* 7 (2020). [Impact Factor: 5.058]
72. Y. Liang, S. Yin, T. Qenfung, Z. Zheng, M. Elgendi, Z. Chen, "Deep Learning Algorithm Classifies Heartbeat Events Based on Electrocardiogram Signals," *Frontiers in Physiology* 11 (2020). [Impact Factor: 4.556]
73. M. Elgendi, M. Nasir, T. Quenfeng, R. R. Fletcher, N. Howard, C. Menon, R. Ward, W. Parker, S. Nicolaou, "The Performance of Deep Neural Networks in Differentiating Chest X-rays of COVID-19 Patients From Other Bacterial and Viral Pneumonias," *Frontiers in Medicine* 7 (2020). [Impact Factor: 5.058]
74. T. Qenfung, Z. Chen, R. Ward, M. Elgendi, "Synthetic photoplethysmogram generation using two Gaussian functions," *Scientific Reports* 10, 13883 (2020). [Impact Factor: 4.6]
75. M. Elgendi, N. Howard, A. Hussain, C. Menon, R. Ward, "From Ancient Times to Modern: Realizing the Power of Data Visualization in Healthcare and Medicine," *Big Data Analytics* 5 (1), 1-7, 2020
76. K. Welykholowa, M. Hosanee, G. Chan, R. Cooper, P. A. Kyriacou, D. Zheng, J. Allen, D. Abbott, N. H. Lovell, R. Fletcher, and M. Elgendi, "Multimodal Photoplethysmography-based Approaches for Improved Detection of Hypertension," *Journal of Clinical Medicine* 9(4):1203, 2020. [Impact Factor: 4.964]
77. M. Hosanee, G. Chan, R. Cooper, K. Welykholowa, P. A. Kyriacou, D. Zheng, J. Allen, D. Abbott, N. H. Lovell, R. Fletcher, and M. Elgendi, "Cuff-less Single-site Photoplethysmography for Blood Pressure Monitoring," *Journal of Clinical Medicine* 9(3):723, 2020. [Impact Factor: 4.964]
78. M. Elgendi and C. Menon, "Machine Learning Ranks ECG as An Optimal Wearable Biosignal for Assessing Driving Stress," *IEEE Access* 8: 34362-34374, 2020. [Impact Factor: 3.476]
79. G. Chan, R. Cooper, M. Hosanee, K. Welykholowa, P. A. Kyriacou, D. Zheng, J. Allen, D. Abbott, N. H. Lovell, R. Fletcher, and M. Elgendi, "Multi-site Photoplethysmography Technology for Blood Pressure Assessment: Challenges and Recommendations," *Journal of Clinical Medicine* 8(11):1827, 2019. [Impact Factor: 4.964]
80. M. Elgendi, "Characteristics of a highly cited article: A machine learning perspective," *IEEE Access* 7: 87977-87986, 2019. [Impact Factor: 3.476]
81. M. Elgendi, R. Fletcher, Y. Liang, N. Howard, D. Abbott, K. Lim, and R. Ward, "The Use of Photoplethysmography for Blood Pressure Aseesment," *npj Digital Medicine* 2 (60), 2019. [Impact Factor: 15.357]
82. M. Elgendi, Carlo Menon, "Assessing Anxiety Disorders Using Wearable Devices: Challenges and Future Directions," *Brain Sciences* 9(3):50, 2019. [Impact Factor: 3.394]
83. Y. Liang, Z. Chen, R. Ward, M. Elgendi, "How Effective Is Pulse Arrival Time for Evaluating Blood Pressure? Challenges and Recommendations from a Study Using the MIMIC Database," *Journal of Clinical Medicine* 8(3):337, 2019. [Impact Factor: 4.964]
84. Y. Liang, Z. Chen, R. Ward, M. Elgendi, "Hypertension Assessment Using Photoplethysmography: A Risk Stratification Approach," *Journal of Clinical Medicine* 8(1):12, 2019. [Impact Factor: 4.964]
85. Y. Liang, Z. Chen, R. Ward, M. Elgendi, "Photoplethysmography and Deep Learning: Enhancing Hypertension Risk Stratification," *Biosensors* 8(4):101, 2018. [Impact Factor: 5.743]
86. G. Martínez, N. Howard, D. Abbott, K. Lim, R. Ward, M. Elgendi, "Can Photoplethysmography Replace Arterial Blood Pressure in the Assessment of Blood Pressure?," *Journal of Clinical Medicine* 7(10):316, 2018. [Impact Factor: 4.964]

87. M. Elgendi, P. Kumar, S. Barbic, N. Howard, D. Abbott, A. Cichocki, "Subliminal Priming - State of the Arts and Future Perspectives," *Behavioral Sciences* 8 (6):54, 2018.
88. Y. Liang, Z. Chen, R. Ward, M. Elgendi, "Hypertension Assessment via ECG and PPG Signals: An Evaluation Using MIMIC Database," *Diagnostics* 8 (3):65, 2018. [Impact Factor: 3.992]
89. S. Kumar, K. Vadlamudi, T. Kaddoura, P. Bobhate, BH. Goot, M. Elgendi, et al. "Active Right Atrial Emptying Fraction Predicts Reduced Survival and Increased Adverse Events in Childhood Pulmonary Arterial Hypertension," *International Journal of Cardiology* 271, 306-311, 2018. [Impact Factor: 4.164]
90. M. Elgendi, P. Bobhate, S. Jain, L. Guo, J. Rutledge, Y. Coe, R. Zemp, D. Schuurmans, I. Adatia, "The Voice of the Heart: Vowel-Like Sound in Pulmonary Artery Hypertension," *Diseases* 6 (2) 26, 2018.
91. Y. Liang, A. Hussain, D. Abbott, C. Menon, R. Ward, M. Elgendi, "An Optimal Filter for Short Photoplethysmogram Signals," *Scientific Data* (5), 180076, 2018. [Impact Factor: 6.444]
92. R. Hussein, M. Elgendi, Z.J. Wang, R. Ward, "Robust Detection of Epileptic Seizures Based on L1-Penalized Robust Regression of EEG Signals," *Expert Systems with Applications*, 104 , 153-167, 2018. [Impact Factor: 6.954]
93. M. Elgendi, "Less Is More in Biosignal Analysis: Compressed Data Could Open the Door to Faster and Better Diagnosis," *Diseases* 6 (1) 18 , 2018.
94. Y. Liang, Z. Chen, G. Liu, M. Elgendi, "A New, Short-Recorded Photoplethysmogram Dataset for Blood Pressure Monitoring in China," *Scientific Data* (5) 180020, 2018. [Impact Factor: 8.501]
95. M. Elgendi, Y. Liang, R. Ward, "Toward Generating More Diagnostic Features from Photoplethysmogram Waveforms," *Diseases* 6 (1) 20 , 2018.
96. M. Elgendi, A. Al-Ali,A. Mohamed, R. Ward, "Improving Remote Health Monitoring: A Low-Complexity ECG Compression Approach," *Diagnostics* 8(10), 2018. [Impact Factor: 3.992]
97. M. Elgendi, "Merging Digital Medicine and Economics: Two Moving Averages Unlock Biosignals for Better Health," *Diseases* 6, 1-4 , 2018.
98. M. Elgendi, "Scientists Need Data Visualization Training," *Nature Biotechnology* 35 (10):990-991, 2017. [Impact Factor: 68.164]
99. M. Elgendi, A. Mohamed, R. Ward, "Efficient ECG Compression and QRS Detection for E-Health Applications," *Scientific Reports* 7: 459, 2017. [Impact Factor: 4.6]
100. L. Guo, P. Bobhate, S. Kumar, K. Vadlamudi, T. Kaddoura, M. Elgendi, et al., "Hyperoxia Reduces Oxygen Consumption in Children with Pulmonary Hypertension," *Pediatric Cardiology* 1-6, 2017. [Impact Factor: 1.838]
101. M. Elgendi, "TERMA Framework for Biomedical Signal Analysis: An Economic-Inspired Approach," *Biosensors* 6(4): 55, 2016. [Impact Factor: 5.743]
102. M. Elgendi, Newton Howard, Nigel H. Lovell, Andrzej Cichocki, Matt Brearley, Derek Abbott, Ian Adatia, "A Six-Step Framework on Biomedical Signal Analysis for Tackling Noncommunicable Diseases: Current and Future Perspectives" *JMIR Biomedical Engineering* 1(1):e1, 2016. [Impact Factor: 7.08]
103. M. Elgendi, M. Meo, D. Abbott, "A Proof-of-Concept Study: Simple and Effective Detection of P and T Waves in Arrhythmic ECG Signals," *Bioengineering* 3(4): 26, 2016. [Impact Factor: 5.046]
104. M. Elgendi, I. Norton, M. Brearley, D. Abbott, D. Schuurmans, "A pilot study: Can heart rate variability (HRV) be determined using short-term photoplethysmograms?" *F1000Research* 5:2354, 2016.
105. M. Elgendi, "Optimal Signal Quality Index for Photoplethysmogram Signals," *Bioengineering* 3(4): 21, 2016. [Impact Factor: 5.046]
106. M. Elgendi, "Eventogram: A Visual Representation of Main Events in Biomedical Signals," *Bioengineering* 3(4): 22, 2016. [Impact Factor: 5.046]
107. T. Kaddoura, K. Vadlamudi, S. Kumar, P. Bobhate, L. Guo, S. Jain, M. Elgendi, J. Coe, D. Kim, D. Taylor, W. Tymchak, D. Schuurmans, R. Zemp, I. Adatia, "Acoustic Diagnosis of Pulmonary Hypertension: Automated Speech-Recognition-Inspired Classification Algorithm Outperforms Physicians," *Scientific Reports* 2016. [Impact Factor: 4.6]
108. L. Guo, P. Bobhate, Y. Cui, S. Kumar, S. Jain, M. Elgendi, S. Pharis, L. Ryerson, I. Adatia, "Measurement of Oxygen Consumption to Determine Cardiac Output in Critically Ill Children: a Comparison Between the Breath-by Breath-Method and Respiratory Mass Spectrometry," *American*

*Journal of Critical Care* 25(3):243-248, 2016. [Impact Factor: 2.12]
109. P. Kumar, F. Mahmood, D. Menoth, K. Wong, A. Agrawal, K. Wong, M. Elgendi, R. Shukla, J. Dauwels, and A. Chan, "Effect of Subliminal Lexical Priming on the Subjective Perception of Images: a Machine Learning Approach," *PLOS ONE* 11(2): e0148332, 2016. [Impact Factor: 3.752]
110. M. Elgendi, P. Bobhate, S. Jain, L. Guo, J. Rutledge, Y. Coe, R. Zemp, D. Schuurmans, I. Adatia, "Detection of Heart Sounds in Children With and Without Pulmonary Arterial Hypertension—Daubechies Wavelets Approach," *PLOS ONE* 10(12): e0143146, 2015. [Impact Factor: 3.752]
111. M. Elgendi, P. Bobhate, S. Jain, L. Guo, J. Rutledge, Y. Coe, R. Zemp, D. Schuurmans, I. Adatia, "The Unique Heart Sound Signature of Children with Pulmonary Artery Hypertension," *Pulmonary Circulation* 5(4): 631-639, 2015. [Impact Factor: 2.886]
112. M. Elgendi, I. Norton, M. Brearley, R. Fletcher, D. Abbott, N. Lovell, D. Schuurmans, " Towards Investigating Global Warming Impact on Human Health Using Derivatives of Photoplethysmogram Signals," *Int. J. Environ. Res. Public Health* 12(10): 12776-12791, 2015. [Impact Factor: 2.5]
113. M. Elgendi, R. Fletcher, I. Norton, M. Brearley, D. Abbott, N. Lovell, D. Schuurmans, "Frequency Analysis of Photoplethysmogram and Its Derivatives," *Computer Methods and Programs in Biomedicine* 122(3): 503-512, 2015. [Impact Factor: 7.027]
114. M. Elgendi, R. Fletcher, I. Norton, M. Brearley, D. Abbott, N. Lovell, D. Schuurmans, "On Time-Domain Analysis of Photoplethysmogram Signals for Monitoring Heat Stress," *Sensors* 15(10): 24716-24734, 2015. [Impact Factor: 3.847]
115. M. Elgendi, B. Eskofier, D. Abbott, "Fast T Wave Detection Calibrated by Clinical Knowledge with Annotation of P and T Waves," *Sensors* 15(7):17693–17714, 2015. [Impact Factor: 3.847]
116. E. Gallego-Jutgla, J. Sole-Casals, F. Vialatte, M. Elgendi, A. Cichocki, and J. Dauwels, "A Hybrid Feature Selection Approach for The Early Diagnosis of Alzheimer's Disease," *Journal of Neural Engineering*, 12(1): 016018, 2015. [Impact Factor: 5.379]
117. M. Elgendi, I. Norton, M. Brearley, D. Abbott, D. Schuurmans, "Detection of a and b Waves in The Acceleration Photoplethysmogram," *Biomedical Engineering OnLine* 13:139, 2014. [Impact Factor: 3.903]
118. M. Elgendi, "Detection of c, d, and e waves in the acceleration photoplethysmogram," *Computer Methods and Programs in Biomedicine* 117(2): 125–136, 2014. [Impact Factor: 7.027]
119. M. Elgendi, P. Bobhate, S. Jain, L. Guo, J. Rutledge, Y. Coe, R. Zemp, D. Schuurmans, I. Adatia, "Time-Domain Analysis of Heart Sound Intensity in Children With and Without Pulmonary Artery Hypertension: a pilot study using a digital stethoscope," *Pulmonary Circulation* (4) 2014. [Impact Factor: 2.886]
120. M. Elgendi, F. Picon, N. Magnenat-Thalmann, D. Abbott, "Arm Movement Speed Assessment Via Kinect Camera: A Preliminary Study in Healthy Subjects," *Biomedical Engineering OnLine* 13:88, 2014. [Impact Factor: 3.903]
121. M. Elgendi, P. Bobhate, S. Jain, L. Guo, J. Rutledge, Y. Coe, R. Zemp, D. Schuurmans, I. Adatia, "Spectral Analysis of The Heart Sounds in Children With and Without Pulmonary Artery Hypertension," *International Journal of Cardiology* (1) 2014. [Impact Factor: 4.039]
122. M. Elgendi, B. Eskofier, S. Dokos, D. Abbott, "Revisiting QRS detection methodologies for portable, wearable, battery-operated, and wireless ECG systems," *PLOS ONE* (9)2014. [Impact Factor: 3.752]
123. M. Elgendi, I. Norton, M. Brearley, D. Abbott, D. Schuurmans, "Systolic Peak Detection in Acceleration Photoplethysmograms Measured from Emergency Responders in Tropical Conditions," *PLOS ONE* 8(10): e76585, 2013. [Impact Factor: 3.752]
124. M. Elgendi, "Fast QRS Detection With An Optimized Knowledge-Based Method: Evaluation on 11 Standard ECG Databases," *PLOS ONE* 8(9): e73557, 2013. [Impact Factor: 3.752]
125. G. Guo and M. Elgendi, "A New Recommender System for 3D E-Commerce: An EEG Based Approach," *Journal of Advanced Management Science* (1) 2013.
126. M. Elgendi, "Standard Terminologies for Photoplethysmogram Signals," *Current Cardiology Reviews* (3) 2012. [Impact Factor: 2.026]
127. M. Elgendi, "On the Analysis of Fingertip Photoplethysmogram Signals," *Current Cardiology Reviews* (1) 2012. [Impact Factor: 2.026]
128. M. Elgendi, M. Jonkman, and F. De Boer, "Improved QRS Detection Algorithm Using Dynamic Thresholds," *International Journal of Hybrid Information Technology* 2(1), 2009.

## Book Chapters

1. M. Elgendi, B. Rebsamen, A. Cichocki, F. Vialatte, and J. Dauwels, "Real-time wireless sonification of brain signals," *Advances in Cognitive Neurodynamics (III)*, pp 175–181, 2013.
2. S. Sarda, M. Constable, J. Dauwels, S. Dauwels, M. Elgendi, Z. Mengyu, U. Rasheed, Y. Tahir, D. Thalmann and N. Thalmann, "Real-time feedback system for monitoring and facilitating discussions," *Natural Interaction with Robots, Knowbots and smartphones-Putting Spoken Dialog Systems into Practice*, Lecture Notes in Computer Science 2013, Springer.
3. M. Elgendi, J. Dauwels, B. Rebsamen, R. Shukla, Y. Putra, J. Gamez, N. ZePing, B. Ho, N. Prasad, A. Nair, V. Mishuhina, F. Vialatte, M. Constable, A. Cichocki, C. Latchoumane, J. Jeong, D. Thalmann,and N. Magnenat-Thalmann, "From Auditory and Visual to Immersive Neurofeedback: Application to Diagnosis of Alzheimer's Disease," *Neural Computation, Neurodevices, and Neural Prosthesis*, Lecture Notes, Springer, New York, in press 2013 (invited: 15-03-12).
4. M. Elgendi, M. Jonkman, and F. De Boer, "Heart rate variability and acceleration plethysmogram measured at rest," *Communications in Computer and Information Science*, Lecture Notes, Springer (invited: 02-04-10).

## Peer-Reviewed Conference Publications

1. S. Li, M. Elgendi, C. Menon, R. H. M. Chan, and E. Y. Lam, "Gait-Based Soft Biometric Estimation Using Wearable Inertial Sensing: Comparative Evaluation and Demographic Fairness Analysis," Proc. IEEE Biomedical Circuits and Systems Conference (BioCAS), pp. 229–233, Oct. 2025.
2. B. C. Hannigan, M. Elgendi, G. Mohsen, C. Menon, "Optimizing wearable motion tracking by assessing sagittal joint angle accuracy with minimal sensor use," *Current Issues in Sport Science*, 9(2), 047, 2024.
3. M. Iews, M. Elgendi, A. Abdelkareem, F. AbdelHafez, A. Hashem, D. Bloomenthal, M. Bedaiwy, "Non-visualized pregnancy losses (NVPLS): diagnostic factors and reproductive outcome in a cohort of 1064 patients with recurrent pregnancy loss (RPL)," *Fertility and Sterility*, 108(3), e104, 2017
4. R. Hussein, M. Elgendi, R. Ward, A. Mohamed, "High performance EEG feature extraction for fast epileptic seizure detection," Proc. the IEEE Global Conference on Signal and Information Processing (GlobalSIP), (pp. 953–957), 2017.
5. S. Gradl, H. Leutheuser, M. Elgendi, N. Lang, and B. Eskofier, "Temporal correction of detected R-peaks in ECG signals: A crucial step to improve R-peak detection algorithms," Proc. 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Milano, Italy; 25–29 Aug 2015.
6. M. Elgendi, "Preliminary study for localizing c, d, and e waves in photoplethysmogram signals," Proc. 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Chicago, USA; 26–30 Aug 2014.
7. P. Kumar, F. Mahmood, D. Menoth, K. Wong, A. Agrawal, K. Wong, M. Elgendi, R. Shukla, J. Dauwels, and A. Chan, "On the effect of subliminal priming on subjective perception of images: a machine learning approach," Proc. 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Chicago, USA; 26–30 Aug 2014.
8. J. Dauwels, P. Kumar, F. Mahmood, K. Wong, A. Agrawal, M. Elgendi, S. Kannan, D. Menoth, R. Shukla, J. Dauwels, and A. Chan, "A study on the effect of subliminal priming on subjective perception of images: a machine learning approach," Proc. 15th International Conference on Biomedical Engineering (ICBME2013), accepted on the 31st July 2013.
9. P. Kumar, F. Mahmood, K. Wong, M. Elgendi, A. Agrawal, S. Kannan, D. Menoth, R. Shukla, J. Dauwels, and A. Chan, "Inferring subliminal primes from EEG through machine learning," Proc. 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, accepted on the 1st April 2013.
10. S. Sarda, M. Constable, J. Dauwels, S. Dauwels (Okutsu), M. Elgendi, Z. Mengyu, U. Rasheed, Y. Tahir, D. Thalmann, Nadia Magnenat-Thalmann, "Real-time feedback system for monitoring and facilitating discussions," Proc. International Workshop on Spoken Dialog Systems, Paris, France; 28–30 Nov 2012.
11. E. Gallego-Jutgla, M. Elgendi, F. Vialatte, J. Sole-Casals, A. Cichocki, C. Latchoumane, J. Jeong,

and J. Dauwels, "Diagnosis of Alzheimer's Disease from EEG by Means of Synchrony Measures in Optimized Frequency Bands," Proc. 34th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, San Diego, USA; 28th Aug–3rd Sep 2012.
12. M. Elgendi, F. Picon, and N. Magenant-Thalmann, "Real-time speed detection of hand gesture using Kinect," Proc. 25th Annual Conference on Computer Animation and Social Agents, Singapore; 09–11 May 2012
13. M. Elgendi, F. Vialatte, M. Constable Vialatte, and J. Dauwels, "Immersive neurofeedback: A New Paradigm," Proc. International Conference on Neural Computation Theory and Applications, Paris; 24–26 Oct 2011.
14. M. Elgendi, F. Vialatte, A. Cichocki, C. Latchoumane, J. Jeong, and J. Dauwels, "Optimization of EEG Frequency Bands for Improved Diagnosis of Alzaheimer Disease," Proc. 33th Annual Int. Conf. of the IEEE Engineering in Medicine and Biology Society, Boston; 30Aug–3rdSep 2011.
15. M. Elgendi, M. Jonkman, and F. De Boer, "Applying the APG to measure heart rate variability," Proc. 2nd International Conference on Computer and Automation Engineering, Singapore, pp. 100–103, 26–28 Feb 2010
16. M. Elgendi, M. Jonkman, and F. De Boer, "Frequency Bands Effects on QRS Detection," Proc. Third International Conference on Bio-inspired Systems and Signal Processing, Spain; pp. 428–431, 20–23 Jan 2010.
17. M. Elgendi, M. Jonkman, and F. De Boer, "Heart rate variability measurement using the second derivative photoplethysmogram," Proc. Third International Conference on Bio-inspired Systems and Signal Processing, Spain; pp. 82–85, 20–23 Jan 2010.
18. M. Elgendi, M. Jonkman, and F. De Boer, "Measurement of a-a intervals at rest in the second derivative plethysmogram," Proc. 2009 International Symposium on Bioelectronics and Bioinformatics, RMIT University, pp. 75–79, 9–11 Dec 2009.
19. M. Elgendi, M. Jonkman, and F. De Boer, "Recognition of T waves in ECG signals," Proc. 35th Annual Northeast Bioengineering Conference, Massachusetts Institute of Technology, pp. 10–14, 3–5 April 2009.
20. M. Elgendi, M. Jonkman, and F. De Boer, "R wave detection using Coiflets Wavelets," Proc. 35th Annual Northeast Bioengineering Conference, pp. 1–4, 3–5 April 2009.
21. M. Elgendi, M. Jonkman, and F. De Boer, "P wave demarcation in electrocardiogram," Proc. 35th Annual Northeast Bioengineering Conference, Massachusetts Institute of Technology, pp. 5–9, 3–5 April 2009.
22. M. Elgendi, M. Jonkman, and F. De Boer, "A robust QRS complex detection algorithm using dynamic thresholds," Proc. IEEE Computer Science and its Applications, Tasmania University, pp. 153–158, 13–15 Oct 2008.
23. M. Elgendi, M. Jonkman, and F. De Boer, "Premature atrial complexes detection using the Fisher linear discriminant," Proc. 8th IEEE International Conference on Cognitive Informatics, Stanford University, pp. 83–88, 14–16 Aug 2008.
24. M. Elgendi, M. Jonkman, and F. De Boer, "Classification of the feature vectors of ECG signals," Proc. International Conference on Information and Computer Technology, American University in Cairo, pp. 228–231, 8–12 Dec 2006.