

DR. ERIC JAMES MCDERMOTT

AI INNOVATOR &
DATA SPECIALIST





EricJamesMcDermott@gmail.com
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Tübingen, Germany


SUMMARY

Driven by a passion to drive global change through technological innovation, my career trajectory as an AI expert combines deep academic knowledge with impactful real-world applications. Holding a doctorate from the International Max Planck Research School and wielding leadership experience as CEO of Meuccitech, coupled with my role as an AI Innovation Specialist at diconium, I have developed a robust T-shaped expertise in AI applications across diverse sectors. My work on user-centric health-tech projects and open-source initiatives demonstrates my proficiency in integrating AI in biomedicine and life sciences. With over ten years of coding experience and a strong background in leading research agendas, I excel in transforming complex data insights into innovative strategies. My collaborative approach and commitment to interdisciplinary teamwork align with a dynamic environment. I am enthusiastic about contributing to advancing intelligent systems, and translating groundbreaking findings into the wider world.

EDUCATION

-  **DR. RER. NAT.: NEURAL AND BEHAVIORAL SCIENCES** 2017-2022

Magna cum laude
International Max Planck Research School
University of Tübingen, Germany
-  **MASTER OF SCIENCE: NEURAL AND BEHAVIORAL SCIENCES** 2014-2016

Magna cum laude
International Max Planck Research School
University of Tübingen, Germany
-  **BACHELOR DEGREE: PSYCHOLOGY** 2007-2011

Summa cum laude
San Diego State University
California, USA

EXPERIENCE

MEUCCITECH - TÜBINGEN & TALLINN

Founder and CEO

01/2023 - present

At Meuccitech, cutting-edge software and technology meet to deliver unparalleled human-like voice synthesis, I serve at the intersection of innovation, leadership, and strategy. My role encompasses a range of responsibilities designed to push the boundaries of what synthetic voices can achieve, aiming for the highest standards of naturalness, prosody, intonation, and pronunciation.

Stakeholder Management: I maintain transparent communication and build relationships with all key stakeholders, including investors, board members, and strategic partners. By aligning interests and setting clear expectations, I ensure a conducive environment for mutual growth and success.

Strategy Planning: Drawing from a deep understanding of technology, market trends, and consumer demands, I spearhead our long-term strategic planning. I carefully balance short-term gains with our enduring vision, navigating the company through complex decisions and potential pivots.

Product Development: I work closely with our CTO and dev team to oversee the development of *SynVoices*. My role here is twofold: first, to set the vision and objectives for product development, and second, to ensure those objectives align with our scientific rigor and technological capabilities.

Team Leadership: Cultivating a culture of innovation and excellence is paramount. I lead an interdisciplinary team of engineers, neuroscientists, psychologists, strategists, and designers who collaborate to transform conceptual ideas into tangible products.

Market Positioning and Branding: In a landscape that's continually evolving, I steer Meuccitech's market positioning and branding initiatives. This includes the responsible use of our products as a cornerstone of our corporate policy.

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EXPERIENCE

💡 DICONIUM DATA - STUTTGART

02/2022 - present

Senior Specialist AI Innovation

04/2023 - present

As the Senior Specialist for AI Innovation at diconium, I wear multiple hats to shape the future of data-driven products. As the Lead of our R&D team, my responsibilities extend from conceptualizing innovations to overseeing their deployment. Our suite of applications leverages emerging technologies and artificial intelligence to unearth valuable insights and offer robust data solutions.

- **Team Building and Leadership:** At the core of our success is a talented R&D team, which I have had the privilege of building and leading. I foster a collaborative and innovative environment where each member's skills are honed and applied to their fullest potential.
- **Technological Scouting:** Constantly on the lookout for emerging technologies, I ensure that we remain at the cutting edge, identifying new opportunities and methods to improve our products.
- **Project Oversight and Management:**
 - **dicobot:** I supervise the development of our bot infrastructure that leverages embeddings to fine-tune user experience on websites.
 - **plotbot:** Users interact with their data using natural language queries, eliminating barriers to data comprehension.
 - **skillFinder:** Through clustering algorithms, we map out skills and jobs within organizations to offer actionable insights for HR and talent management.
 - **synconium:** Create synthetic data that can be used to supplement existing datasets
 - **oracle:** Automated trend forecasting and scenario generation, arming decision-makers with proactive strategies.
 - **SEOboost:** Our team conducts clustering analyses combined with NLP and large language models to restructure websites and boost SEO standings.
 - **label factory:** An end-to-end labeling pipeline, from folder upload to segmentation, classification, format conversion, warehousing, intelligent search, and automated data driven insights

Senior Product Manager | Data

02/2022 - 04/2023

AI Strategy, Innovation, and Maturity

- Developed a high-level strategic roadmap for the integration of artificial intelligence within the VW Group
- Created a novel maturity level assessment of AI-based capabilities on company level; allowing for internal KPI generation and white-spot analysis, M&A, hiring strategies, and data-driven research and development planning
- Identified areas for cost reductions through synergy of AI-based projects across groups
- Implemented large scale innovation process and idea funnel
- Conducted in-depth interviews on subject matter experts and then streamlined the information flow to others

Platform Engineering and (AI) Data Products

- Identified over 10M euro a year leakage and led multinational team to develop a novel proof-of-concept data platform solution; creating the ability to intelligently store, manage, and query labelled data for machine learning, business insights, and data science
- Communicated product vision and strategic decisions to stakeholders
- Conceptualized and conducted a company-wide "data (as a) product" workshop; and then orchestrated and led development of first ever in-house data product
- Blueprinted implementation of AI based auto-labelling solutions within current framework limitations

Process Optimization

- Developed pitch deck to win clients within the space of AI, ML, and data science
- Onboarded and grew new internal data product team; along with creation of new onboarding framework
- Managed team of product owners
- Fostered cross-company learning and exchange through creation of knowledge hub
- Organized OKRs within team and location

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EXPERIENCE

💡 MEDICAL INNOVATIONS INCUBATOR - STUTTGART & TÜBINGEN

09/2018 - 02/2022

Technical and Business Liaison

A versatile role, enriched by a robust set of skills that were employed to help startups succeed. My responsibilities were as dynamic as the startups I served. From coding to networking and from design to strategy, my role was to be the glue that connected different aspects of startup needs, thereby guiding them towards success.

My main activities were:

- *Startup Partnership and Consultation*: One of the core aspects of my job was to work hand-in-hand with startups. I actively engaged in consulting sessions where we evaluated their product ideas, business models, and market strategies. My background in psychology and neuroscience allowed me to bring a unique perspective to human-centered design and user experience.
- *Technical Solutions and Development*: When startups faced technical roadblocks, I stepped in to offer solutions. This could range from actual coding to advising on software architecture. Understanding the significance of lean startup methodology, I employed rapid prototyping and iterative models to quicken the development cycles.
- *Networking and Connections*: Startups often require the right set of connections to move to the next level. Leveraging my broad network, I facilitated introductions to potential investors, advisors, and industry experts. My role also involved liaising between the startups and these stakeholders, ensuring both parties were aligned in their objectives.
- *Strategic Design and User Experience*: Sometimes put on the designer's hat to help startups articulate their vision through visuals. Whether it was developing wireframes, presentations, or full-fledged user interfaces, my design input often served as a catalyst in the product development process.
- *Outcome and Impact*: The most rewarding aspect was seeing startups evolve and flourish. Some secured their first investment rounds, while others scaled their operations or pivoted successfully based on the insights and support I provided.

💡 REHALITY - TÜBINGEN

07/2017 - 02/2022

Project Lead

At Rehality, I spearheaded an interdisciplinary initiative aimed at revolutionizing post-stroke motor rehabilitation. Collaborating with four academic institutes and industry partners, we combined Extended Reality (XR), ML & AI, and real-time biosensor data to enhance patient recovery.

My main responsibilities were:

- *Conceptualization & Planning*: Defined the project's vision by integrating neuroscience and technology.
- *Research & Experimentation*: Conducted studies involving EMG, EEG, and eye-tracking.
- *Experiment Creation*: Developed experimental conditions for evaluation.
- *Data Analysis*: Analyzed results to validate our machine learning algorithms and adapt our virtual reality environments.
- *Business Operations*: Helped secure BMBF grant funding and managed relationships with stakeholders.
- *Team Leadership*: Worked with a team of neuroscientists, doctors, software engineers, business experts, UX/UI designers.

Impact & Highlights:

- *Technological Innovation*: Developed a patient-responsive XR system leveraging real-time data analysis. Our XR platform improves both the cost and effectiveness of care by enhancing patient engagement and allowing therapists to manage a larger patient load effectively.
- *Clinical Relevance*: Stroke is a leading cause of motor disabilities worldwide. Current therapeutic methods are labor-intensive and often ineffective, as evidenced by 37% of stroke victims still requiring assistance post-therapy. Therefore, we initiated scientifically-backed clinical studies to demonstrate our approach's effectiveness in post-stroke motor rehabilitation.

Next Steps:

- Having developed a working prototype and secured initial funding, the project has moved into the clinical trials phase to validate its impact on healthcare outcomes.

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EXPERIENCE

💡 PROMETHEUS SCIENCE - TÜBINGEN

06/2017 - 10/2018

Project Lead & "CEO"

We developed a low-cost 3D-printed biology lab capable of basic microscopy, fluorescent imaging, optogenetics, and behavioral tracking for a fraction of the cost of the competitors. We released it open-source, positively empowering users and impacting regions across the world. To do so, we sourced components and hand-built hardware units while coordinating supply chain and logistics. We ran workshops on 4 continents, and were featured in Forbes Brasil. The project lives on as a non-profit.

💡 CENTRE FOR INTEGRATIVE NEUROSCIENCE - TÜBINGEN

05/2015 - 10/2017

Researcher

Investigation of Vision Restoration through Optogenetics

- Utilized optogenetic methods as a mechanism to sense light within retina
- Created behavioral paradigms to assess the extent of restored vision
- Experimental protocol design and manuscript writing
- Planned and conducted investigations, data collection, and analysis

Virtual Reality and Binocular Rivalry

- Created a novel paradigm for presenting binocular rivalry stimuli in virtual reality
- Experimental design
- Programming in C# and Unity3D

Laboratory of Cognitive Neuroscience: "Shedding Light on Deep Neural Networks"

- Implemented an artificial neural network to explore hypothesis
- Manipulated images, image processing, and experimental design

Sensory Systems in Natural Environments: Study and classification of Orthoptera communication systems

- Experimental design, data collection, and signal processing
- Taxonomy and classification methodology creation

💡 INSTITUTE OF READING DEVELOPMENT - SAN DIEGO

04/2013 - 08/2014

Teacher

As an instructor at the Institute of Reading Development, I was responsible for implementing 8 different curriculum focusing on a range from 3-4 year olds to University level. As best as possible, I effectively taught 10 classes per week.

💡 THE NATIONAL INSTITUTE OF MENTAL HEALTH AND NEURO SCIENCES - INDIA

08/2011 - 10/2012

Fulbright Research Scholar

I was awarded a research grant after finishing my Bachelors degree. My focus was on Huntington's disease (HD). Working in one of the largest institutes and hospitals in southern India, I carried out a project titled: "Tuning the Brain: Huntington's Disease and Neurofeedback training"

- Used Neurofeedback in efforts to increase cognitive function and motor control
- Protocol design, data collection, data analysis, grant writing, manuscript writing
- Utilizing qEEG and neuropsychological assessments to create a neuropsychological profile of HD

💡 THE VETERAN'S AFFAIRS MEDICAL CENTER - SAN DIEGO

01/2011 - 07/2011

Psychological Assistant

I studied the behavioral systems and personality characteristics of Parkinson's Disease

- Uncovered evidence for behavioral circuit mapping in Parkinson's disease.
- Scientific manuscript and poster development and presentation.





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TEACHING

- | | |
|---|-----------|
|  Methodological Frontiers of Neuroscience
Graduate Training Center
Lecturer (Virtual Reality, Biosensors, and Embedded Systems; MSc level) | 2019-2021 |
|  Instructor: English, Sports
Deutsch-Amerikanisches Institute | 2016-2020 |
|  Speed Reading and Comprehension
Institute of Reading Development | 2013-2014 |
|  Statistics in Psychology
San Diego State University | 2009-2011 |

INVITED SPEAKING OPPORTUNITIES

- | | |
|---|--|
|  The Four Pillars of Artificial Intelligence <ul style="list-style-type: none">• <i>Diconium co-creation day</i>• <i>Bosch Innovation day</i>• <i>Stihl Innovation day</i>• <i>VW OneShop Workshop</i> | |
|  Exposing Neural Dynamics with Real-time Control <ul style="list-style-type: none">• <i>Society for Neuroscience, San Diego</i> | |
|  Virtual Rehality for Rehabilitation <ul style="list-style-type: none">• <i>2nd Place: Early Career Investigator Award; International Conference for Virtual Reality (ICDVRAT)</i>• <i>1st Place: Hackathon "VR4Rehab" (AR game for kids)</i>• <i>2nd Place: MedTech Demo Day Pitch (Rehality)</i> | |
|  Open Source Science <ul style="list-style-type: none">• <i>1st Place: MedTech Demo Day Pitch (Prometheus Science)</i>• <i>Stuttgart Rotary Club</i> | |
|  Vision Restoration through Optogenetics <ul style="list-style-type: none">• <i>German Center for Neurodegenerative Diseases</i> | |
|  Shedding Light on Deep Neural Networks <ul style="list-style-type: none">• <i>Neurowissenschaftliche Nachwuchskonferenz Conference for Junior Neuroscientists</i> | |
|  Tuning the Brain: Huntington's Disease and Neurofeedback training <ul style="list-style-type: none">• <i>South and Central Asia Fulbright Conference</i> | |
|  Social Networks to Neural Networks <ul style="list-style-type: none">• <i>Indira Gandhi National Open University</i> | |
|  Behavioral Systems and Personality in Parkinson's Disease <ul style="list-style-type: none">• <i>First National Conference of Neuropsychology and Cognitive Neuroscience</i> | |
|  Opportunities Abroad <ul style="list-style-type: none">• <i>Alpha Phi Omega Service Fraternity – National Conference</i> | |

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SUPERVISION PROJECTS

- 🚀 AI-generated photorealism: Development of a semantic image synthesis pipeline; *MSc (HdM); 2nd supervisor*
- 🚀 Automate, Generate, Integrate: The Future of Scalable Data Labeling; *MSc (TUM); direct internship supervision*
- 🚀 Finetuning vs. Embedding in LLMs; *2x MSc students (Karlsruhe & TUM); science & business internship supervision*
- 🚀 Optimizing TSF Models; *3x MSc students (Pforzheim, Mannheim, TUM); science & business internship supervision*
- 🚀 Automating SEO with LLMs; *MSc (Stuttgart); general internship supervision*
- 🚀 Conception and comparison of a prototype game VR and AR for rehabilitation; *MSc (HdM), general scientific supervision*

PUBLICATIONS

- 📖 Artifacts in EEG-based BCI therapies: friend or foe? (2022)
- 📖 Real-time decoding of 5 finger movements from 2 EMG channels for MR human-computer interaction (2021)
- 📖 Predicting motor behavior: an EEG processing pipeline to detect relevant brain-states (2021)
- 📖 Brain oscillation-synchronized stimulation ... using real-time EEG-triggered TMS (2020)
- 📖 The Effects of Weight & Height on Hand Selection: A Low-cost Virtual Reality Paradigm (2018)
- 📖 Building and Hacking Open Source Hardware (2018)
- 📖 Vision Restoration through Optogenetics (2017)

CERTIFICATIONS

- 📖 AI Solution Product Manager
- 📖 User Interface Design
- 📖 Unity3D Design
- 📖 Lean Six Sigma Yellow Belt Certification
- 📖 Lean Six Sigma White Belt Certification
- 📖 SAFe Agilist Certification
- 📖 Scrum Master Certified (SMC)

SKILLS

- 🔧 VR / AR / XR Development
- 🔧 EMG / EEG
- 🔧 UX/UI/CX
- 🔧 Public Speaking / Outreach
- 🔧 Motion Tracking
- 🔧 MATLAB / Python / C# / C++
- 🔧 Data Analysis
- 🔧 Research Methods and Design
- 🔧 Machine Learning / BCI
- 🔧 Arduino / Raspberry Pi

AWARDS

- 🏆 Early Career Investigator Award; International Conference for Virtual Reality (ICDVRAT, 2nd place)
- 🏆 Max Planck Society Achievement Scholarship
- 🏆 Max Planck Institute Bridging Fund
- 🏆 U.S. Fulbright Research Fellowship
- 🏆 Hackathon "VR4Rehab" (Crystal Ball, 1st place)
- 🏆 MedTech Demo Day Pitch (Rehality, 2nd place)
- 🏆 MedTech Demo Day Pitch (Prometheus Science, 1st place)
- 🏆 Kappa Sigma Scholastic Achievement Award
- 🏆 Associated Students Study Abroad Scholarship