At Technische Universität München (TUM), Department of Informatics, Chair of Robotics, Artificial Intelligence and Embedded Systems (Prof. Knoll), we are seeking a computer scientist in full time with expertise in machine learning, cloud computing, electric circuit design and programming, and electronic signal processing for scientific research within a BMBF funded project on battery management. The position is limited to a maximum of three years. Close collaboration with experimental electrochemists carrying out fundamental research on battery ageing is foreseen. As the project will be carried out in collaboration with China, the successful candidate must be willing to spend several months in Shanghai and/or in Beijing for joint activities with the project partners.

Scientific co-worker in Computer Science (Postdoc, TVL 13, full time)

The area of responsibility includes the performance of scientific tasks, in particular:

- Researching a new concept on battery management systems within an electrochemical research team in collaboration with German and Chinese scientists
- Design of measurement signals and routines on low cost electronic processors, sensors and circuitry
- Collection and processing of data from measured batteries
- Application of machine learning tools, cloud computing and big data methods for detailed analysis of measured data and data history
- Integration into a battery management concept, from physical measurement to processing in the car to communication via internet to external software and data analysis
- Determination of key parameters of automotive batteries (SOC, SOH, RUL and others)
- Considerations on standardization
- Supervision of master students
- Drafting annual reports and publications

Requirements:

- Sound expertise in machine learning methods, cloud computing and general programming (data fitting, solutions to systems of non-linear equations, control theory).
- Fundamental knowledge in electronics and electronic measurement circuitry (CPUs, data transfer, signal composition and processing).
- Very good English language skills and an openness to working in an international environment are essential.
- Ability to work efficiently and independently, and with a pronounced organizational understanding.
- Willingness to travel and to carry out research stays of up to 2 months (at once) in China (in total up to 4 months over the runtime of the project).

We offer:

- Challenging tasks of key importance for the success of electromobility, embedded in a funding program to foster electric mobility in collaboration with Chinese partners.
- An environment of trust and mutual support.
- Working in an interdisciplinary research team at the leading German University of Technology.
- Collaboration with experimental electrochemists in the field of battery operation.
- Collaboration with Chinese scientists and direct on-site insight into Chinese culture and research institutions.
- Contact to industrial companies via associated partners in the project and other research cooperations.
- Training in standardization aspects of electromobility via experts in the field (e.g. DKE, DIN).

As part of the Excellence Initiative of the German federal and state governments, TUM has been pursuing the strategic goal of substantially increasing the diversity of its staff. As an equal opportunity and affirmative action
employer, TUM explicitly encourages nominations of and applications from women as well as from all others who would bring additional diversity dimensions to the university’s research and teaching strategies. Preference will be given to disabled candidates with essentially the same qualifications. The remuneration will be according to TVL 13.

Please send your complete application, including CV, letter of motivation and copy of certificates via email to Dr. Oliver Schneider (oliver_m.schneider@tum.de) preferentially before May 31, 2018.

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