

# ***Mechatronic Engineering – Tutoring enrollment***

***Below you'll find a set of potentially available tutor cards. You will be asked to participate in classes in which you will mark your preferences towards participation in tutoring and order of preference of tutors. We can't guarantee that you will get the tutor you would like to. This is due to the fact that:***

- a) Tutor pool for Polish and English mechatronic is joint***
- b) One tutor usually cannot offer more than one spot***
- c) We have only 4 spots in total (2 for Polish and 2 for English program)***

***We will be organizing Tutor-Tutee pairs in order of your recruitment points, starting from the highest recruitment result and highest preference for particular tutor, until we run out of spots, candidates or tutors.***

***More information on tutoring is available here: <https://www.cel.agh.edu.pl/czym-jest-tutoring/>  
And in my youtube video here: <https://youtu.be/3lPisF6dD1w>***

***(note, that while this course is organized according to general rules and regulations of AGH tutoring, its is NOT part of the AGH Tutoring program and this is why the pool of available tutors is much smaller). If you are eligible for the general tutoring program and don't have strong preference towards particular tutor from our pool, it might be worth considering to participate in general program instead)***

***- Ziemowit Dworakowski***



## ***Joanna Iwaniec, dr hab. inż.***

### ***Who am I?***

*My scientific interests involve topics related to the diagnostics and condition monitoring of technical devices, numerical analysis, nonlinear systems, as well as the measurement and processing of data (including biomedical data). I enjoy working with people, continuously developing new knowledge and skills (lifelong learning), and participating in the interdisciplinary projects.*

### ***For the Mechatronic Engineering students, I offer the following tutoring topics:***

- *Application of selected numerical methods in data analysis and processing.*
- *Fundamentals of designing and implementing database systems.*
- *Elements of academic work: working with literature, formulating conclusions, writing abstracts, summaries, and biographical notes, etc.*
- *Elements of presentation, self-presentation, and public speaking.*

### ***More information:***

- <https://badap.agh.edu.pl/autor/iwaniec-joanna-004941>
- <https://www.researchgate.net/profile/Joanna-Iwaniec>



## ***Jakub Roemer, dr inż.***

### ***Who am I?***

I am an Accredited Tutoring Practitioner. My research focuses on thermography, with a particular emphasis on non-destructive testing (NDT).

### ***In scope of Tutoring for Mechatronic Engineering we can work on:***

- *In-depth study of infrared imaging*
- *Introduction to heat transfer mechanisms*
- *Gaining insights into project management, with a particular focus on the R&D sector*
- *Preparation for academic research: literature review, source evaluation, critical thinking and project planning*

### ***More information:***

*Full tutor card: <https://www.cel.agh.edu.pl/personel-agh/roemer-jakub/>*

# *Ziemowit Dworakowski, dr hab. inż.*

## *Who am I?*

I am passionate about both artificial and natural intelligence. I work on mechanisms of thinking and learning in machines and in humans, cognitive biases, and creative problem-solving strategies. Professionally, I apply AI tools to solve problems across the broadly understood field of mechanical engineering.

## *In scope of Tutoring for Mechatronic Engineering we can work on:*

- *Learning basic and advanced Artificial Intelligence tools*
- *Building decision-making systems for solving problems in Mechanical Engineering and Mechatronics – in particular for monitoring machines, processes, and structures*
- *Preparation for scientific work: working with literature, critical thinking and evaluation of knowledge sources*
- *Applying role-playing and narrative tools to broaden perspective and reframe mechatronic problems*

## *More information:*

*Full tutor card: <https://www.cel.agh.edu.pl/personel-agh/dworakowski-ziemowit/?tryb=tutoring>*

*My webpage: <https://galaxy.agh.edu.pl/~zdw/>*



## **Bartłomiej Chojnacki, dr inż.**

### **About me:**

As a vibroacoustics specialist I help explain where vibration and noise in machines come from and how to measure them, reduce, and also use them for practical purposes (e.g., diagnostics). I combine measurements and signal analysis with FEM/BEM modelling and validate models using experimental data. I like actively using modern AI tools to support engineering work.

### **In scope of Tutoring for Mechatronic Engineering we can work on:**

- *Machine diagnostics based on vibration and noise: from measurement to conclusions about technical condition*
- *Vibroacoustic signal analysis: FFT/STFT, spectra, FRF, filtering, features for diagnostics and ML*
- *FEM/BEM modelling of dynamic systems, model-measurement comparison (validation)*
- *AI for engineers: anomaly detection, condition classification, good data practices, and proper use of GenAI to support engineering work*

### **More information:**

Full tutor card: <https://www.cel.agh.edu.pl/personel-agh/chojnacki-bartlomiej/>



## ***Katarzyna Suder-Dębska, dr inż.***

### ***About me:***

I am a mechanical engineer and a sound engineer.

Throughout my professional development, I have focused on issues related to room acoustics and sound systems, environmental noise protection, modeling sound sources and their propagation, and finally, I moved on to the modeling of fluid flow.

### ***In scope of Tutoring for Mechatronic Engineering we can work on:***

- ▣ *Learning engineering modeling methods and tools;*
- ▣ *Numerical modeling of acoustic problems;*
- ▣ *Numerical modeling of fluid mechanics and mechano-acoustic coupling;*
- ▣ *Working with scientific texts – Where to source? How to select? How to use? How to cite?*
- ▣ *Creating your own scientific texts – from the substantive side, through the formal side, to the editorial and visual side*

### ***More information:***

*Full tutor card: <https://www.cel.agh.edu.pl/personel-agh/suder-debska-katarzyna/?tryb=tutoring><https://www.researchgate.net/profile/Katarzyna-Suder-Debska>*



## ***Edyta Brzychczy, dr hab. inż.***

### ***About me:***

By nature, I am an incurable optimist who enjoys creating and taking action. Academic work is my passion and an ongoing adventure. For over 20 years, I have been working on topics related to process modelling and optimisation, as well as broadly understood data analysis.

### ***In scope of Tutoring for Mechatronic Engineering we can work on:***

- *Introduction to classical Data Science methods*
- *In-depth introduction to process analytics*
- *Experiments with generative AI models for research*
- *Preparing for academic work: methodologies and tools that support the creative process*

### ***More information:***

*Full tutor card : <https://www.cel.agh.edu.pl/personel-agh/brzychczy-edyta/>*

*My webpage: <https://home.agh.edu.pl/~brzych3/>*