Niels de Koeijer

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Education

- **Delft University of Technology** — Delft, The Netherlands
  Master of Science in Electrical Engineering; Signal Processing Specialization — *Sep. 2018 – July. 2021*
- **Delft University of Technology** — Delft, The Netherlands
  Bachelor of Science in Electrical Engineering; Minor in Computational Science — *Sep. 2015 – July. 2018*

Technical Skills

- **Programming Languages**: C, C++, Rust, Python, MATLAB
- **Technologies**: Docker, Embedded Linux, gstreamer, CMake

Experience

- **Bang & Olufsen** — Copenhagen, Denmark
  Research DSP Engineer — *Oct 21 2021 - Present*
  - **Work as part of Research and Development Department**:
    - Pioneering of AI inference pipeline, bringing research results to running real-time on an embedded device.
    - Design and implementation of a real-time source separation algorithm on an embedded device.
    - Design of a real-time packet loss concealment algorithm, running in C on an embedded device.
    - Design of a bass enhancement algorithm through real-time convex optimization on an embedded device.
    - Supervision of multiple MSc students, yielding collaboration on open-source signal processing libraries.
  - **Algorithms and Software for ISOBEL Sound Zone Audio Streaming Framework**:
    - Contributing ISOBEL research project, funded by Innovation Fund Denmark, leading to multiple publications.
    - Development of algorithms and a C++-based embedded streaming framework powered by gstreamer
- **Bang & Olufsen** — Struer, Denmark
  Research Intern MSc Thesis — *Sep 20 2020 - Oct 21 2021*
  - **MSc Thesis Project**:
    - Collaborating with Bang & Olufsen on Master thesis.
    - Work published in IEEE/ACM Transactions on Audio, Speech, and Language Processing.
    - Gained experience with: convex optimization, implementing interior point solvers, perceptual models.
- **Arenal PCS** — Pijnacker, Netherlands
  Embedded Software Developer — *Jul 19 2019 - Jul 20 2020*
  - **Software Development for Ultrasonic Measurement System**:
    - Designed and maintained a C# codebase that drove an embedded ultrasonic sensor measurement system.
    - Collaborated with R&D to design and implement new measurement algorithms.
    - Configured the Linux operating system for the readout of sensors and enabling remote VPN access.
- **Delft University of Technology** — Delft, Netherlands
  Teaching Assistant — *Sep 18 2018 - Oct 21 2021*
  - **Assistance BSc Course Signal Processing**:
    - Assisted students with practical implementations of signal processing techniques in MATLAB. Supervised and organised the final project for the course.
    - Helped manage and create course material and content.
  - **Assistance MSc Course Scientific C++**:
    - Assisted students with their university assignments alongside professors, helping them understand theory covering C++17, specifically for use in practical scientific contexts. Topics included C++ templates, the C++ STL and project management in CMake.
    - Built and improved an online C++ homework environment within which the course was held.