

Personal Statement for PhD

I am writing to express my strong interest in pursuing a PhD at Maynooth University under the supervision of **Dr. Behnam Faghih**, focusing on the proposed research topic: ***Designing Interactive Visualization Tools for Key Transposition in the Singing Process: Based on an Auto-Tune Algorithm***. This project represents the ideal convergence of my academic training, industry experience, and deep-rooted passion for music.

I graduated from Maynooth University with a Higher Diploma in Software Development (2021–2022), achieving **a GPA of 94.9% and ranking second in my class**. This outstanding academic performance reflects not only my diligence and dedication but also my deep understanding of software engineering fundamentals, particularly in front-end development. During my studies, I independently developed multiple full-stack projects, including a [Food Pyramid App](#), [Simon Game](#), [Full Stack Music Application](#), [Weather Application](#), and [Pomodoro Timer](#). These projects allowed me to master the full development cycle—from UI design to back-end integration—and demonstrate my ability to build technically robust and user-focused applications. This experience directly supports my ability to develop a sophisticated, full-stack application for **pitch correction and key transposition** during my PhD research.

Since graduation, I have accumulated over two years of professional experience as a full-stack developer in an insurance company, where I focused on React-based web applications and honed my coding and debugging skills in a commercial environment. My strong foundation in software development ensures that I can tackle technically challenging aspects of the proposed research with confidence and precision.

In addition to my industry experience, I have remained closely connected to the academic community. Since 2022, I have worked as a part-time lab demonstrator at Maynooth University's Computer Science Centre, assisting students in several key modules: **CS210 Algorithm & Data Structure, CS230 Web Information Processing, CS353C Group Project, and CS385 Mobile Application Development**. These roles have allowed me to contribute to Maynooth University's academic environment, providing hands-on guidance to students and improving lab engagement. Over time, I have developed effective strategies to help students overcome common programming challenges, and these insights have pedagogical significance for the department's teaching practices. The experience of being a lab demonstrator has also laid a solid theoretical foundation for my future academic research, especially in designing learner-centric tools that integrate technical complexity with educational usability.

What excites me most about this PhD opportunity is its profound alignment with **Dr. Behnam Faghieh's** research interests, which include **Music Information Retrieval (MIR)**, **Music Modelling** (singing and performance analysis), **Music Alignment** (score following, transcription, and similarity analysis), and **Music Assessment**. My proposed research topic—***Designing Interactive Visualization Tools for Key Transposition in the Singing Process: Based on an Auto-Tune Algorithm***—is closely connected to these domains. The first step of my research involves processing and analysing the input vocal recordings to extract relevant musical features, which directly corresponds to the domain of **Music Information Retrieval (MIR)**. The subsequent Auto-Tune-based processing of vocal input intersects with **Music Alignment and Music Assessment**. I believe that under Dr. Behnam Faghieh's expert supervision, and through combining his research direction with my enthusiasm and persistence, I will be able to make meaningful contributions to the field of music programming, auto-tune algorithm and pitch correction technology.

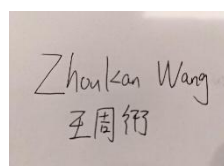
Equally important is my genuine passion for music, which serves as a constant source of motivation for this research. I have been **playing guitar for over seven years** and frequently enjoy singing and playing music at anywhere. After moving to Ireland, I obtained a **Dublin Street Performance Permit** and have performed successfully at Dublin Street for several times. I am also the rhythm guitarist of band – [The Spectrum](#). We have performed at major cultural events, including the Chinese Students and Scholars Association (CSSA) Spring Festival Gala and the Lunar New Year celebrations at Hill Street Family Resource Centre. Most recently, we have been preparing to bring our performances to the streets of Dublin as a full band. These musical experiences not only reflect my personal dedication but also provide me with the musical insight and sensitivity that I intend to bring into my research.

I am immensely grateful for the knowledge and training I received at Maynooth University, which laid the foundation for my software development journey. Returning as a researcher, I hope to give back to Maynooth University—through academic contribution, collaborative development, and the creation of innovative tools that benefit learners and musicians alike.

Thank you for considering my application. I look forward to the opportunity to work under the guidance of Dr. Behnam Faghieh and to contribute meaningfully to the academic and research community at Maynooth University.

Yours sincerely,

Zhoukan Wang



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