

Jeremy Springman, PhD
Research Assistant Professor
Department of Political Science
University of Pennsylvania
904-415-7278
jspr@sas.upenn.edu

To: U.S. Citizenship & Immigration Services

Dear USCIS Officer,

I am a Research Assistant Professor in the Department of Political Science at the University of Pennsylvania and a Director of Research in PDRI-DevLab. As an applied researcher leading large-scale, federally funded projects, I have spent the last decade working with U.S. government policymakers on issues related to national security and foreign policy. My work has received support from the U.S. Department of Defense, Agency for International Development, National Science Foundation, and several private foundations. My research has been published in a range of academic journals and I have published more than a dozen policy reports commissioned by U.S. government agencies.

I am writing in emphatic support of Mr. Zung-Ru Lin's petition for EB-2 National Interest Waiver visa status in the United States. I have worked with Mr. Lin since 2021, when my research lab recruited him to work on several high-profile projects intended to apply cutting-edge computational methods to pressing research on U.S. national security. At the time, Mr. Lin possessed singular skills in machine learning, particularly in natural language processing, machine learning, and artificial intelligence. As the importance of these tools to U.S. national security and economic supremacy have become more clear, Mr. Lin's skills and experience have only grown in value.

Since 2021, I have collaborated with Mr. Lin on several large-scale projects commissioned by the U.S. Department of Defense and the U.S. Agency for International Development. During this time, Mr. Lin's work has made vital contributions to U.S. foreign policy decision-making. Mr. Lin pioneered the application of artificial intelligence language models to U.S. foreign policy and national security research.

On one project, Mr. Lin led the construction of a massive research infrastructure collecting open source intelligence data from hundreds of high-quality media sources around the world and using advanced computational tools to process this data with state-of-the-art machine learning. This effort generated a constantly updating database tracking political instability in developing countries and forecasting models to predict where and when future instability was likely to occur.

This project received additional funding to generate data tracking efforts by our geopolitical competitors to exert political and economic influence in strategically important countries. These efforts aided U.S. foreign policy decisions around escalating geopolitical competition with China and generated new evidence on the behavior of Russia in advance of the invasion of Ukraine.

These projects provided U.S. government missions across more than 70 countries with actionable intelligence, included data dashboards averaging 150 hours of monthly active usage time by U.S. policy-makers and more than 1,200 unique users over a 10 month period. Furthermore, more than

800 U.S. government policymakers signed up to receive monthly reports. Importantly, the forecasts from this project had a 70% accurate rate and provided U.S. missions with advanced warning of nearly 80 major instances of political instability across 30 countries.

Mr. Lin is one of the most skilled data engineers in the world working on applications of national language processing. His applied research has taken multi-lingual text classification with language models to new extremes, demonstrating how machine translation and language models could be combined to perform high-quality text classification across more than 40 languages. This breakthrough opened the door to the projects described above.

Beyond his applied research to inform U.S. foreign policy and advance national security, Mr. Lin is also working on research to advance scientific approaches to both artificial intelligence and applications of machine learning for medical research. In ongoing work, Mr. Lin introduces a new transformer-based architecture that enhances the flexibility of how large language models sequence text. Critically, this new architecture preserves the model's interpretability, making a major contribution to the rapidly growing field of transparent and understandable artificial intelligence.

Mr. Lin is also working on research that will guide medical researchers in their efforts to estimate the causal effect of medical interventions in non-randomized clinical trials. Specifically, Mr. Lin's work demonstrates how new approaches that incorporate machine learning can help identify treatment effects more accurately than traditional approaches.

In summary, Mr. Lin has made tremendous contributions to U.S. national security policy research, demonstrating how artificial intelligence can inform U.S. foreign policy at a large scale. Mr. Lin is also poised to make scientific advances in artificial intelligence architecture and medical research methods. This makes him invaluable to the United States and a tremendously qualified candidate for a National Interest Waiver.

Sincerely,

Jeremy Springman