Shiya Wang

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BIO DATA

Nationality: Chinese   Date of Birth: 19 October 1991

SUMMARY

I hold a Bachelor's degree in Information Engineering (China), a Master's in Media Informatics (Germany), and am currently pursuing a PhD in Cognitive Neuroscience (Spain). My academic path reflects a deep and evolving interest in the intersection of media art, computer science, and neuroscience, particularly as the boundaries between these fields continue to blur. My research spans a wide range of computational methods – from deep learning architectures (MLPs, CNNs, Transformers, GNNs) to traditional machine learning models, such as SVMs and linear models with matrix decomposition techniques (e.g., ICA, CSP, PCA), applied primarily to fMRI data. I am especially drawn to the geometric foundations of linear algebra and the use of Monte Carlo methods for simulation. I approach research with curiosity, a collaborative mindset, and a commitment to advancing broader scientific understanding.

EDUCATION

2023 –	**PhD in Cognitive Neuroscience**	**Basque Center on Cognition, Brain and Language, Spain**
	Working on robust decoding of subcortical fMRI signals in response to sensory inputs, as well as functional connectivity and network analysis of the brain. I'm currently co-supervised by Prof. Carmen Vidaurre and Prof. Pedro Manuel Paz-Alonso.	
2017 – 2022	**M.Sc. in Media Informatics**	**Universität des Saarlandes, Germany**
	Core modules: Geometric Modeling Human Computer Interaction Statistics with R Neural Networks	
2009 – 2013	**B.Sc. in Information Engineering**	**Chengdu University of Technology, China**
	Core modules: Advanced Mathematics Circuits Analysis Signals and Systems Analog and Digital Signal Processing Information and Coding Theory C/C++ programming language	

THESES

Exploring the Impact of Multiple Machine Translation Proposals in Post-editing, Master Thesis, 2022
Advisor: Dr. Nico Herbig
Reviewers: Prof. Dr. Antonio Krüger, Prof. Dr. Josef van Genabith

- Designed a within-subjects study to explore the post-editing process given multiple machine translated sentences
- Trained a machine learning model (Transformer) to generate diverse and high quality translation suggestions
- Implemented a web-based module as a part of an online post-editing platform

Publication

1. Liu Mengxing, Shiya Wang, Carmen Vidaurre, Sara Guediche, Garikoitz Lerma-Usabiaga, and Pedro M. Paz-Alonso. (2025). *Language comprehension functionally modulates first-order relay thalamic nuclei.* Manuscript submitted for publication.

RESEARCH EXPERIENCE

09/2021–03/2022   **Intern (Erasmus)   Institut de Robòtica i Informàtica Industrial, CSIC-UPC, Barcelona, Spain**
- Built, trained and tested an unsupervised graph-based neural network based on an existing method
- Improved accuracy scores from baseline for both clustering and feature encoding on MNIST digits dataset

WORK EXPERIENCE

06/2019–09/2019   **Intern   Andreas Greiner Studio, Berlin, Germany**

    - Trained generative adversarial network to generate forest images
    - Ran an introductory workshop on artificial intelligence and assisted the artist in preparing for an exhibition

06/2015–03/2016   **Product Manager   Bolaa Network, Shanghai, China**

    - Collaborated with designers and developers to build websites for small businesses
    - UX design and presentations

11/2014–06/2015   **Product Assistant   Morning Whistle Group, Shanghai, China**

    Assisted in UX design and competitive product analysis on merger and acquisition web products

06/2013–11/2014   **IT Specialist   IBM China Global Delivery Center, Chengdu, China**

    Maintained an internal billing system that ran on IBM mainframes

PROJECTS

Mini ray tracing project (c++)	Rendering spheres with dielectric, diffuse, and metal materials with ray tracing
Neural network from scratch (Python, Numpy)	A 2-layer neural network built from scratch for MNIST digits recognition
Interactive installation projects (Processing)	- Dancing Symbols (Visualized human movement with Kinect) - Self Replicated City (Visualized Conway's algorithm Game of Life)

RESEARCH SKILLS

- Proficient in Python, scientific toolkits (PyTorch, Numpy, Scipy, matplotlib, conda, etc.), and C
- Basic experimental design and data analysis
- Basic Linux command lines and version control (git, vim and shell scripting)
- Other skills: Latex, Beamer, R, Matlab, Processing

LANGUAGES

Chinese (native), English (C1), Spanish (A1)

CONFERENCE

Thalamocortical Networks (ThaNet), 16 – 17 May 2024, Donostia - San Sebastián. Gipuzkoa, Spain

RERERENCES

Carmen Vidaurre, PhD supervisor, Associate Group Leader, Ikerbasque Research Associate 2021-2026
    carmen.vidaurre@unavarra.es
    Language and Memory Control Group, BCBL, Spain

Pedro Manuel Paz-Alonso, PhD supervisor, Group Leader, Ikerbasque Research Professor
    p.pazalonso@bcbl.eu
    Language and Memory Control Group, BCBL, Spain

Nico Herbig, Researcher and Master's supervisor   info@nicoherbig.com
    Natif AI, German Research Center for Artificial Intelligence (DFKI)
    Saarland Informatics Campus, 66123 Saarbrücken, Germany

Mariella Dimiccoli, Researcher, erasmus project's supervisor   maria.dimiccoli@upc.edu
    Institute of Robotics and Industrial Informatics (CSIC-UPC)
    Parc Tecnològic de Barcelona. C/ Llorens i Artigas 4-6, 08028, Barcelona, Spain

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