

Yunzhe Nie

Towards a Cognitive Science Entrepreneur.

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EDUCATION

UWC CHANGSHU CHINA

Changshu, Jiangsu, China

IB Curriculum in Further Mathematics, Philosophy, Chinese A: Literature, English B, Physics, Economics May 2018

Predicted Grade: 42/42 (Rank 1/204); Honor: Second Award in National Linguistics Olympiad; National Second Prize in Shing-Tung Yau High School Mathematics Award; Bronze Medal Robot King in World GreenMech Contest

CARNEGIE MELLON UNIVERSITY

Pittsburgh, PA, USA

B.S. in Cognitive Science, Minor in Philosophy

August 2018 – May 2022

EXTRACURRICULAR ACTIVITIES

RESEARCH ON DIFFERENTIAL EQUATION

Beijing, China

Team Leader

Summer 2017

- Tackled the initial value problem for higher order ordinary differential equations by applying Radial Basis Function neural networks to Picard-Lindelöf Theorem to quickly provide accurate solutions to integral iterations
- Contacted mathematics lecturer from Beijing Normal University, arranged 80 hours of training on mathematical analysis and machine learning methods, applied MATLAB, Mathematica, and LaTeX in the research process

LABORATORY FOR BRAIN SCIENCE AND NEUROTECHNOLOGY, BEIJING INSTITUTE OF TECHNOLOGY

Beijing, China

Research Assistant

Spring 2017

- Analyzed neuroimaging data of Functional Magnetic Resonance Imaging and classified patients with Subjective Cognitive Decline, ultra-early stage of Alzheimer's disease, with Support Vector Machine neural networks
- Learned 40 hours courses on Alzheimer's disease and neuroimaging analysis, fostered strong data processing skills, co-developed a user-friendly neuroimaging toolkit called *BrainSort*, submitted paper to *Brain Journal*
- Research papers available at <https://sylphrena.github.io/researchpapers/>

Research on Air Quality in Shanghai

Suzhou, Jiangsu, China

Team Leader

Summer 2015

- Utilized time series analysis to build model on Air Quality Index in Shanghai for prediction, achieved an absolute error of less than 6, applied Granger test to establish causal relationship between AQI, wind power and temperature, received national second prize in the 2016 Shin-tung Yau High School Mathematics Award
- Learned advanced statistics and probability, time series analysis, and correlation analysis for 60 hours under the guidance of lecturer in Sun Yat-sen University, became familiar with R language in the research process

LEADERSHIP EXPERIENCE

MAKERFUNC STEM SUMMER CAMP & HACKATHON

Suzhou, Jiangsu, China; Beijing, China

Co-Founder & Public Relation Director

October 2016 – Present

- Initiated MakerFunc 2017 as the first STEM summer camp and hackathon independently organized by high school students in China and attracted over 100 participants, with 15 of them receiving full financial aid
- Invited mentors and experts from global universities to teach courses of AI, AR/VR and Robotics, and arranged workshops about 3D printing, drones, and supercomputers for more than 200 people (<https://makerfunc.xyz/>)
- Published promotional and informative articles, gained 35,000 views and over 600 followers on social media

HUAZHI LITERATURE

Changshu, Jiangsu, China

Founder & General Director

January 2017 – Present

- Translated Chinese literature with deep cultural connotation to English and provided a special column for each section of the book to introduce the cultural implications behind characteristically Chinese words
- Employed over 20 translators, allocated bilingual Chinese editors and one native English speaker for each book section, and monitored to ensure faithfulness, expressiveness, elegance, and idiomaticity of translation
- Finished translation of two books with over 100,000 words and attracted over 2000 readers on social media

SKILLS AND OTHERS

- **Languages/Skills:** Mandarin (Native), Python, MATLAB, Mathematica, LaTeX, R, C, C++, Pascal, HTML, CSS
- **Interests:** badminton, piano, programming, writing, designing, instrumental music, debate, community service
- **Activities:** Research on Psychological Mechanisms of Procrastination, Chinese Debate Association President, Public Relation Director of UWC Changshu China Chinese Cultural Evening, Chairman of local Hearthstone event

聂蕴哲

望成为一名认知科学的创业者。

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教育

中国常熟世界联合学院

中国江苏省常熟市

IB 国际文凭课程（进阶数学，哲学，中文文学，英语，经济，物理）

2016.8–2018.5

预估分：42/42，排名：1/204；荣誉：语言学奥林匹克竞赛全国二等奖；丘成桐中学数学奖全国二等奖；世界机关王大赛铜奖；新加坡国立大学“优才创新大使”；Adecco Group 中国区“CEO For One Month”活动全国前五；ARML 美国区域数学联赛全球 Top 100 团队

CARNEGIE MELLON UNIVERSITY 卡耐基梅隆大学

PITTSBURG, PA, USA

认知科学理学士，哲学辅修

2018.8–2022.5

学术经历

机器学习与微分方程研究

中国北京市

队长 2017 夏季

- 将径向基函数神经网络运用至皮卡-林德勒夫定理的快速、多次积分迭代问题上，得出了一个通用的黎曼积分算法，并由此提供了一种求高阶常微分方程以及常微分方程组初值问题函数近似解的通用机器学习解法
- 自主联系到北京师范大学数学讲师指导研究，在数学分析与机器学习两方面进行了近 80 小时的学习和训练，在研究过程中获得了大量运用 MATLAB、Mathematica、LaTeX 的经验

北京理工大学脑与神经科学实验室

中国北京市

研究助理

2017 春季

- 合作分析了来自功能核磁共振成像（fMRI）的阿尔兹海默症病人神经影像数据，运用支持向量机神经网络分类了阿尔兹海默症超早期状态——主观认知衰退（SCD）的病人，正确率达 80.24%，论文已投稿 Brain 期刊
- 参与阿尔兹海默症和神经影像的课程，习得了数据处理与英文学术论文写作的技能，合作使用 Python 开发了 BrainSort 神经影像处理工具包（原文 <https://sylphrena.github.io/researchpapers/>）

上海市空气质量指数分析与预测研究

中国江苏省苏州市

队长 2015 夏季

- 运用时间序列分析的统计算法建立了上海市空气质量指数（AQI）预测模型，绝对误差不超过 6 个单位；通过 Granger 因果检验等方法确立了 AQI 与风力、温度的关系，论文获得 2016 年丘成桐中学数学奖全国赛的二等奖
- 在中山大学数学讲师的指导下进行了统计、时间序列理论方面近 60 小时的训练，建模过程中大量运用了 R 语言

实践经历

MAKERFUNC 创客方程科技夏令营 & 创客马拉松

中国江苏省苏州市、中国北京市

联合创始人 & 公关负责人

2016.10 至今

- 2017 年开启了全国第一个由高中生独立创办的此类活动，近 100 位同学参与（15 位全奖）；2018 年将于清华举办
- 邀请中美来自哈佛大学、斯坦福大学、清华大学、加州大学伯克利分校、卡内基梅隆大学等一流理工名校的顶级专家和导师向同学们教授机器学习、自然语言处理、增强现实/虚拟现实、机器人 ROS、Web/App 设计等课程
- 邀请工业界领袖向近 200 名观众开设神威太湖之光超级计算机、3D 打印、无人机等话题的讲座
- 发布宣传推文总计超过 45000 浏览量，微信公众号拥有超过 1500 位关注者（官网 <https://makerfunc.xyz>）

华帙文学翻译

中国江苏省常熟市

创始人

2017.1 至今

- 将具有中国文化内涵的小说译英，并针对具有源远流长文化沉淀的文章内容开设专栏介绍背后的含义
- 招募了近 20 位精通中英双语的译者和以英语为母语的校勘，以“信”、“达”、“雅”三位编辑把关每一份翻译
- 完成了近 10 万字的两部小说的翻译，在校内开展了 200 多位学生参与的寻符活动，在外国社交媒体上有 2000 读者

技能和兴趣

- 语言/技能栈：中文（母语），英语（流利）；熟悉 R，MATLAB，Mathematica，Python，LaTeX；了解 C/C++，Pascal，HTML/CSS
- 兴趣：羽毛球，钢琴，编程，哲学讨论，写作，视觉设计，纯音乐，辩论，志愿者活动
- 活动：拖延症的认知心理机制调查与研究，中国常熟世界联合学院中国文化晚会主席团成员及公关部负责人，中文辩论知行社团社长