



服务手册

2021版





感谢你关注 KD 博士!

KD 博士是国内首个支持海外博士信息查询的中文平台。目前, KD 博士平台已经累计收录了全球近百所名校的近万个博士项目, 积累了大量院校招生数据, 并由此得出了海外院校博士招生偏好和趋势的分析模型, 能够为学员申请海外博士项目提供独家的规划方案。

近年来, 海外博士留学因其丰厚的学习回报和优越的人才政策, 已成为当下优秀人才的第一选择。

在未来, 海外博士留学的趋势与祖国的崛起密不可分。KD 博士不仅是海外博士留学品牌, 更是国际关系的洞察者。因为 KD 博士不仅能提供了传统留学机构的申请服务, 更能够通过数据和经验形成全球科研洞察, 帮助学员匹配到符合时代要求、并且能够充分发挥个人优势的院校和项目。

1. 博士学位的优势

1.1 博士学历不会贬值

作为学术科研最尖端的一小撮人, 博士研究生拥有对专项领域的系统性和前瞻性的认识, 是智慧和能力的象征, 是国家未来科技经济发展的中坚力量。

近年来大学学历不断贬值。在我国, 大学本科和硕士研究生不断扩招, 学历含金量大幅下降, 造成的后果就是劳动力市场中本科和硕士毕业生泛滥, 教育经历不断贬值。

2019 年, 中国普通本专科招生 914.90 万人, 比上年增加 123.91 万人, 增长 15.67%; 在校生 3031.53 万人, 比上年增加 200.49 万人, 增长 7.08%。高校学生人数的增长, 一方面说明我国的高等教育越来越普及, 培养出来的人才越来越多。另一方面来看, 大学毕业生所面临的就业压力, 在逐年增大。像 2019 年毕业人数达到 800 万以上, 对于高校应届毕业生, 特别是本科和硕士毕业生来说, 寻找到一份好工作, 并不是那么简单。

不过在高校学生大军中, 博士研究生数量始终非常有限。从 1982 年中国第一批 6 位博士研究生毕业开始, 到 2019 年, 中国博士毕业生才刚刚超过 6 万。¹ 平均来讲, 全世界 25 到 64 岁的高校毕业生中, 仅有 1.1% 拥有博士学位。²

较少数量的博士生, 代表着高校博士研究阶段对生源质量的高标准、严要求, 确保了博

¹ 人民网. 2019 年全国教育事业发展统计公报: 在校生人数逾 2.8 亿[A/OL]. (2020-05-20) [2021-01-27]. <http://edu.people.com.cn/n1/2020/0520/c1053-31716824.html>

² Alice Clubbs Coldron. How Rare (or Common) is it to have a PhD? [A/OL]. (2019-12-17) [2022-01-27]. <https://www.findaphd.com/advice/blog/5403/how-rare-or-common-is-it-to-have-a-phd>



士研究生学位极高的含金量。更重要的是，这个含金量没有受到学历贬值这一趋势的影响。

1.2 博士生更具职场竞争力

现在，越来越多的用人单位意识到，拥有着博士学位的人才，往往更具职场竞争力。尤其在高新技术领域，博士研究生学历已经逐渐成为单位招聘的硬性门槛。

纵向对比本科、硕士研究生和博士研究生的薪酬待遇和职业发展，也很容易发现，博士研究生能够创造的价值和所享受的待遇，远超本科和硕士研究生。

QS Rankings 的一份调查研究显示，不同行业中，博士毕业生和本硕毕业生的工资之间的差距有所不同。在零售行业，本科毕业收入仅 3 万 2 千欧元左右，硕士毕业收入约 4 万 4 千欧元，而博士毕业收入高达 6 万欧元。在航空航天领域，不同学历带来的收入差距更大。本科毕业收入不到 4 万欧元，硕士毕业收入可以到 6 万欧元，而博士毕业收入便高达 7 万 2 千欧元左右。报告同样指出，随着越来越多的人拥有本硕学位，博士学位在劳动力市场越来越吃香。³

1.3 博士留学已成为趋势，国际人才的价值得到进一步认可

在进入博士阶段学习时，一部分人更看重国际化的学习氛围，想要吸取国外科研发展的经验，选择去往发达国家攻读博士学位。这也与中国留学的大趋势相符。近年来，中国与海外学术交流愈加频繁，不断深入，中国优秀学子去往海外高校深造读博早已成为主流。

为了进一步提高国家发展水平，推进行业转型，中央和地方政府、各大企业在不断出台友好人才政策，吸引海外高素质人才回国就业、创业。其中，海外博士作为专业领域内，活跃在全球科研一线的高精尖人才，最受到国内用人单位的青睐。

北京、上海、广州、深圳等一线城市均出台了海归博士的落户政策。相比于国内高校毕业生需要通过缴纳社保、考取证书等传统方式进行积分落户，优秀留学生通常能够走专项人才引进通道，轻松便捷地落户一线城市。相比于海归本科和硕士，海归博士的落户政策通常更加宽松。例如国外大学的本科和硕士毕业生想要落户上海，需要毕业于一定排名之内的高校，而对于国外大学的博士生来说，任意国外大学的博士学位均具有落户资格。⁴除了落户资格外，各地政府为了吸引人才，还为海内外博士人才提供几万到几十

³ QS Staff Writer. Masters and PhD: Salary Benefits[A/OL]. (2007-10-01) [2021-01-27].

<https://www.topuniversities.com/student-info/careers-advice/masters-phd-salary-benefits>

⁴ 上海市人力资源和社会保障局. 关于印发《留学回国人员申办上海常住户口实施细则》的通知：沪人社规〔2020〕25 号 [A/OL]. (2020-11-13) [2021-01-27].

http://rsj.sh.gov.cn/tlxry_17298/20201130/t0035_1396472.html



万不等的补贴费用。这些费用或以现金形式分期发放，或是用于住房安家补贴，或是转为博士生创业的税收减免等。

除了政府渴求博士人才外，华为、阿里、腾讯和小米等大型科技企业也十分关注海内外名校博士的人才招聘。优秀的博士研究生在这些企业取得年薪百万并不稀奇。2019 年，华为集团创始人、CEO 任正非提出要在全世界范围内招收天才少年，说到，“今年我们将从全世界招进 20-30 名天才少年，明年我们还想从世界范围招进 200-300 名。”到 2020 年 8 月，全球有四人拿到华为“天才少年”最高一档年薪 201 万元，而这四人均是博士研究生。2020 年，更有企业为杰出人才，开出 360 万人民币的年薪。⁵⁶

1.4 海归博士学位已成为高校任教的硬性门槛

比起在企业任职，对于想要继续遵从科研道路的学术型人才来讲，高校和研究机构是不二的职业选择。现在，高校引进高素质人才时，博士学位是一项基本的要求。国内优质高校的教职更是要求有海外知名院校的博士的学习经历。比如，在重庆大学 2020 年弘深人才引进计划中，很多岗位说明了海外博士属于优质人才引进对象。⁷

从国家的友好政策、企业的招聘条件和高校的人才引进要求来看，博士学位，特别是海外名校博士学位所发挥出的巨大优势。

1.5 该去哪里读博？北欧博士待遇一骑绝尘

到了博士留学阶段，海外知名高校的奖学金覆盖率非常高，大多数时候，在学博士生并不需要支付学费。同时，学员们还能在攻读博士学位时申请当地政府和高校的补贴，同时也可以从科研项目转化成果中，获得不错的收入。

如果学员足够优秀，能够去往瑞典、芬兰、挪威等高福利北欧国家，攻读岗位制博士，那更是能够在不用支付学费的基础上，与院校签订人事合同，成为院校正式雇员，享受一切当地公民应有的福利，比如稳定工资收入、住房和交通补贴、带薪假期等。在成功获得博士学位后，博士学习的时长更是能够计入在合法工作年限，达到当地移民局所需的工作年限后，博士生即可获得永久居留权（绿卡），从而在毕业后享受到和当地居民几乎完全相同的福利政策，包括子女的免费教育、家人的免费医疗等。

⁵ 周玲. 任正非：华为将从世界范围招揽天才少年，未来要自己创造标准[A/OL]. (2019-06-27) [2021-01-27]. https://www.thepaper.cn/newsDetail_forward_3784810

⁶ 华为家事. 任总在 2019 年 6 月 20 日 EMT《20 分钟》的讲话[A/OL]. (2019-06-27) [2021-01-27]. http://xinsheng.huawei.com/cn/index.php?app=forum&mod=Detail&act=index&id=4343641&search_result=3

⁷ 重庆大学人事处. 重庆大学常年招聘海内外英才[A/OL]. (2020-05-22) [2021-01-27]. <http://rsc.cqu.edu.cn/info/1039/2694.htm>



卓然的学术地位, 深入的专业知识, 完备的科研能力, 再加上友好的政策和优厚的福利, 攻读博士学位, 特别是海外岗位制博士学位, 在学历不断贬值的今天, 是一个难能可贵的机会。

2. 岗位博士申请的难度

岗位制博士的回报极高, 是留学生最理想的读博方式, 但是优质稀缺的资源注定只属于少部分人。想要顺利开启岗位制博士阶段的学习生活, 博士申请人所需要付出的努力和准备也是一般人所难以想象的。

2.1 开放名额少

岗位制博士申请难度大, 根本原因在于高校招生名额较少。与本科和硕士项目动辄几百个招生名额相比, 海外高校单独博士项目同期招收的候选人数量基本不会超过三个。像北欧的岗位制博士项目, 每次甚至只招收一到两名学生。

2.2 竞争对手强

其次, 在申请博士项目时, 你的竞争对手都是各大院校和科研机构的顶尖学员。大家无论是从专业能力、科研水平, 还是从个人能力、心理素质上来说, 都是出类拔萃的。想要从这样一群优秀的人才中脱颖而出, 无疑需要你拥有深刻的学术理解, 以及丰富的科研经历。在海外院校的博士招聘筛查阶段, 来自全世界各地的优秀学子同台竞技, 这对申请人语言能力、专业知识以及学术水平等提出了更高的要求。

2.3 申请程序繁杂

具体到申请环节, 一套完整的海外博士申请流程通常包括: 1. 确定研究方向; 2. 选择院校和导师; 3. 准备 PS、CV、RP 等文书材料; 4. 与导师套磁; 5. 根据导师意见修改文书材料; 6. 进行网申和面试; 7. 跟踪申请结果和准备出境手续等环节。由于海外博士申请所需材料较多, 我们强烈建议博士申请人提前一年至一年半时间进行申报准备。

2.4 专业垂直度高

北欧高校博士招生专业垂直度高。大多数情况下, 北欧高校在博士项目公开招聘之初, 已经确定了研究方向, 项目组只会在目标专业领域内, 选择与项目目标相匹配的人才。所以, 学生在选择申请的项目时, 需结合自己之前的学习和研究经历, 并在申请的材料中突出这些经历。

2.5 招生周期短

北欧岗位制博士还有一点不同, 那就是招生周期短。其他国家或地区的博士项目招生每



年都有固定的招生周期，但是在北欧，导师都是根据研究项目的进展情况来招聘科研人员。不同研究项目的进展情况各不相同，开放的时间并不固定，并且，多数项目申请窗口的开放时间极短。极端情况下，项目申请时间只有 2 周。因此，申请者想要成功获得北欧岗位制博士录取，需要时刻关注空位开放情况，随时准备申请。

相比起申请本科和硕士项目，申请海外博士更像是一场持久战。申请者首先要具备扎实的专业知识和科研能力，其次还需要科学地规划时间，然后持续稳定地执行规划。

3.KD 博士的优势

3.1 KD 博士提供全面的博士项目信息

KD 博士 (kdphd.com) 是国内首个全方位提供海外博士信息搜索的中文平台。KD 是英文短语 Key Definition 的缩写，代表着我们希望 KD 博士的用户，可以成长为科研领域的重要角色，为科学技术的不断发展提供关键的思考与定义。

3.2 KD 博士的数据赋能服务团队

KD 博士网站上的项目信息是实时更新的，能够在最大程度上保障用户抓住每一个申请机会。项目信息长期积累所形成的数据，对于 KD 博士团队而言则是一笔不可多得的财富。KD 博士团队通过不断深入分析这些数据，成功总结出过去院校招生的规律。在此基础上，团队还持续性地搜集近期院校的招生政策和录取情况等信息，并将这些信息与院校招生规律相整合，由此，我们团队能够预测院校在未来的招生趋势。

3.3 KD 博士提供专业的申请服务

KD 博士服务团队在各项服务过程中，以多年从业经验为基础，以院校招生规律和趋势为指导，力求帮助学员展现出院校倾向的特质。目前，KD 博士的留学服务包括文书材料、面试指导等单项服务，以及全套的申请服务。

依托于 KD 博士网站，KD 博士的文书材料服务已经实现了全程线上自助下单和交付。在保证语言水平的基础上，文书服务团队根据院校招生的倾向，着重突出学员身上最符合项目要求的特点。让学员通过我们的文书，成为院校更加“喜欢”的学生。

KD 博士的面试指导老师通过模拟操练，帮助学员展现出院校青睐的特质。在模拟面试前，指导老师会根据学员材料和项目的录取要求，设计面试可能出现的问题。在模拟面试中，老师将学员的表现和院校的招生倾向进行匹配，从而整理出学员的优缺点。在此基础上，老师会为学员提出切实有效的改善意见，提升学员的面试表现。

KD 博士的全套申请服务老师会从背景提升、项目选择、时间规划等诸多方面入手，辅助学员进行海外博士申请。如果学员的学术背景和科研能力仍需提高，我们会帮助联络



海内外名校导师，指导学员进行项目研究，督促学员落实研究成果，帮助学员培养研究能力。在和学员一同选定目标项目时，我们会根据 KD 博士的历史项目数据变化，预测相关专业空位开放情况，从而帮助学员提前做好时间规划。同时，我们会根据院校招生规律和倾向，客观评估目标项目的申请难度，并设计不同预案来应对可能的结果。

4.案例展示

下面,我们选择了一些有代表性的案例进行展示,帮助你更直观地感受 KD 的各项服务。

4.1 文书设计

在博士申请过程中，院校要求提交的文书一般包括个人陈述，简历和研究计划。不同的文书需要达到不同的目标。一般来讲，个人陈述展现申请动机和基本能力，简历突出专业背景和研究水平，而研究计划，顾名思义，需要说明博士研究的时间规划和预期成果。因此，在编写这些文书时，所需要注意的地方也各不相同。

4.1.1 个人陈述

在个人陈述中，申请者需要重点突出自己进行博士阶段学习和研究的动机和信心，也要通过简要介绍研究经历，来证明自己的能力。个人陈述的目的，就是让导师能够明白，申请人有足够的动力和能力来完成研究，并取得预期的成果。

在下面这个案例中，我们在不同段落设计了不同内容。下面这封个人陈述，从研究动机、教育经历、科研经历和能力以及信心和动力等方面，全方位的展示了学员的特点，让导师能够快速了解学员的基本情况。

Respected [REDACTED]

I'm [REDACTED], an experienced researcher in psychology. I'm writing to apply for the doctoral position in Developmental Psychology. My research motivation is to develop language-specified metrics in longitudinal studies, by applying machine learning onto eyetracking data, which could be implemented in specific language deficiencies filtering. Similar methods are used extensively in the research of schizophrenic patients' eye movements.

研究动机

With an educational background in experimental psychology, I'm particularly interested in cognitive studies of eyetracking and developmental science. Furthermore, I have worked on eyetracking for over 7 years in my first job as a research assistant, which led to several publications and public academic speech. Also, my current employment as an algorithm manager largely practiced my statistical skills, using R, Python, MATLAB.



Graduate study in psychology provided me with advanced knowledge in this field. A large number of professional courses, such as advanced psychological statistics, advanced cognitive psychology, theory of psychological development, laid a solid foundation in psychological study. Furthermore, I chose the direction of experimental psychology and joined Prof. Guo's lab in graduate study. Under the guidance of [REDACTED], I quickly learned EEG research methods and implicit cognitive measure skills. Before the study of EEG, our courses never touched signal processing, I proactively contacted the EEG Lab of Zhejiang University of Technology and spent a winter in the lab to learn about it. Upon graduation, I finished my master thesis on the subject of Golden Section and Implicit Measure, which received much recognition from professors.

教育经历

My current role as a developer of psychological devices requires knowledge of an interdisciplinary field of psychology and computational modeling. I used machine learning and statistical measures to conduct research on sleep classification and fatigue detection and analysis on depression and anxiety based on EEG, etc. During the process, I accumulated plenty of research experience and project management skills. For example, in the research of sleep stage classification, I adopted Python Scikit-Learn tool to analyze HRV data and preprocessed the data utilizing the PauTa criterion and normalization algorithms. After that, I employed both supervised and non-supervised learning methods - dimension reduction, clustering, binary regression, Hidden Markov Chain modeling – and an active learning method (uncertainty sampling) to recognize visual fatigue signs and psychiatric symptoms (like anxiety). A similar procedure was also adopted in classifying different sleep stages. Finally, the output binary regression model was programmed into a smart wristband for psychological health monitoring and into a smart mat for sleep quality monitoring. The research of fatigue detection applied psychometrics methods, such as reliability and validity analysis, exploratory factor analysis, to measure the fatigue state. Each project included complex processes, requirements identification, work distribution, personnel training, and process optimization. I believe that the research capabilities and project management skills developed in the process will contribute a lot to my doctoral study.

科研经历和能力

4.1.2 简历

在简历的书写过程中，申请人要明确项目的录取要求，按照这些要求来排布过往的经历。如果某些经历与项目研究方向不符，即使这些经历再“高大上”，放在简历中也是无效的。在申请海外的本科和硕士项目时，我们的简历会突出标化成绩和获奖情况，而申请博士所用的简历则更注重学术经历和成果。

在下面这封简历中，我们在简要说明学员的个人信息和教育背景后，着重突出了学员的学术经历和科研成果。这种排布方法能够让导师将注意力集中到学员参与过的科研项目上，从而帮助导师更顺利地了解学员的科研水平。

ACADEMIC EXPERIENCE

The Fifth Eye-Tracking Conference

Nov. 2017

Hosted by East China Normal University and Tianjin Normal University

Shanghai, CN

Speaker: Time Series Correlation Analysis of Eye-Tracking Data

- Published the research result based on the user experience business project supported by PingAn Financial Group
- Use eye-tracking devices to track eye-movement data and analyze the reasons behind the decrease in visits of certain website module
- Employed Pseudo-Causal statistical method in the analysis process

学术经历



The Third Eye-tracking Conference

Hosted by Tobii Company

Speaker, Analyzing Eye-tracking Data

- Introduced fundamentals of eye-tracking research in psychology
- Explained the summary of typical eye-tracking devices and their use cases in user interface design research
- Guided audience in how to use visual outputs of eye-tracking, like heat map

May. 2015

Shanghai, CN

EEG lab, Zhejiang University of Technology

Trainee

- Assist in conducting brain electricity (EEG) experiments in psychology
- Assist in analyzing brain electricity (EEG) data

Dec. 2007

Hangzhou, CN

PUBLICATIONS

学术成果

Zhiqiang Huang, Fangfang Zhang, Zhuojun Gu, Tao Chen, Su Gu, Yanling Wang. Pre-driving fatigue detection system for high-speed railway drivers. *Railway Computer Application*, 2019, 08, 14-17.

Xiaowei Yuan, Zhuojun Gu. I know what you are thinking – Application of eyetracking in interface design. *Psychology : Techniques and applications*, 2013, 01, 31-33.

Comparison of Non-linear and Linear Models of Single Channel EEG in patients and normal subjects. Gu ZhuoJun, Huang ZhiQiang, Zhu Xiao, Shi ShenXun. bioRxiv 702605; doi: <https://doi.org/10.1101/702605>

Gu, Zhuojun (2010). Golden Section and Implicit Measure. (Master Thesis, East China Normal University)

SKILLS

Language Skills: English – IELTS 7.5, French – A2, Chinese – Native

Computer Skills: C/C++ Programming, SPSS, R, Python, Matlab

4.1.3 研究计划

研究计划是博士申请阶段的重中之重。研究计划这项申请材料，能够充分展示申请者的科研能力，是导师深入了解申请者的重要窗口。从和导师沟通的时候开始，研究计划就发挥着至关重要的作用。一份出彩的研究计划书应当条理清晰，可行性强。在此基础上，申请者还需要在研究计划书中合理安排研究时间和预期成果。打磨好研究计划的内容后，申请者还需要关注格式、篇幅等细节，比如部分院校对字体、字号等会提出要求。

下面是对一篇研究计划书初稿的修改记录。文书老师首先是在语法层面修改错误，保证语法正确，语句通顺。然后，文书老师还会综合考量文章各部分语义表达情况，保障语义连贯清晰，逻辑顺畅，重点突出。这样修改过的研究计划，条理清晰，语句顺畅，能够基本满足海外院校对研究计划的要求。出于保护隐私的考虑，我们选择了部分段落进行展示。



3. Brief summary of the research plan

Research on extending SCL90 is rare. Resilience is a core concept related to personal well-being, which has two constructs, adversity, and active adaptation, measured by the Ways of Coping scale and Connor-Davidson Resilience Scale (CD-RISC). This research aims to use subscales in SCL90 to predict the constructs of resilience, ~~by means of advancement utilizing new applicable methods~~ from machine learning, such as regularized regression, nonlinear prediction, and symbolic prediction. Also, ~~for easier application to facilitate the methods utilization, Mmokban aAnalysis~~ is used to shorten the length of these subscales without interfering ~~with~~ the prediction accuracy. Finally, all prediction models will be validated in a larger sample. The output of the research is a multi-functional SCL90.

4. Research plan contains mathematical special characters or chemical formulas

No.

5. Motivation for conducting doctoral research

My general motivation is that a ~~PhD-Ph.D. degree and the knowledge and research skills I will master when working for the degree~~ would ~~substantially expedite my career development to offer me great value in my career~~. My current job is research-intensive, but I lack a research-oriented level degree at advanced level, i.e., a PhD. ~~Specifically for example, during my work~~ as a data engineer, I have made two measures extending SCL90 usage. One is ~~the~~ suicidal possibility of high school students, and the other is ~~the~~ bullying possibility, both based on linear equations of certain items. However, ~~because I only hold a master's degree as an engineer, it is impossible for the company to allocate enough lacks~~ resources to ~~further proceed the make a more solid research and finalize and publish the results, so as to better put the results into practice to publish researches of similar logic~~. In addition, the specific field of SCL90 is my point of interest. ~~The primary motivation is to do a more rigid work of this kind of research~~. SCL90 is widely used in daily settings for screening mental problems, which is the core concept of ~~public~~ mental ~~publie~~-health. ~~Could if it could be applied in more scenarios multi-functional, SCL 90#~~ would be more valuable for health ~~promotion and disease prevention work~~.

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Friedman, 1991). Symbolic prediction (see Gplearn in the ~~literature~~-literature reference) uses a genetic algorithm to automatically find an equation ~~which that reduces allows~~ the prediction errors (correlation for example) ~~to be as close to the minimum as much~~ as possible.

c2) Supporting methods of ~~reducing items~~; ~~reduces~~

Nonparametric item response theory, ~~like Mokken Analysis~~, would be used to ~~reduce the item number~~. Among them, ~~mokken (see Mokken Analysis in the literature reference) would be used. This method could reduce the number of items (Wang et al., 2015)~~. Also, ~~the~~ Parametric uni-dimensional items response theory would be used to ~~validate~~ in a larger sample size (Wang et al., 2015).

7. Objectives of the research and scientific impact of research results

a) ~~Limited~~Rare Work of extending subscales in SCL90

~~Research Works of on~~ extending SCL90 ~~are~~ still ~~growing~~-developing and have not been ~~recognized widely received~~ ~~broad recognition~~. For example, a 5-factor psychopathological model of heroin addiction has been proposed using factor analysis (Maremmami et al., 2012) and validated later (Pani et al., 2014). ~~These works indicate the potential value of extending SCL90~~

批注 [Hc2]: 验证具体对象需要补充。

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b) Inspirations from the research of 16PF

b1) Second-order analysis of primary factors

A typical example of extending subscales in personality psychology is second-order factors in Cattell's 16PF. These second-order factors are linear combinations of primary factors (subscales). These second-order factors (or global factors, see Cattell, & Mead, 2008) in 16PF are extracted from primary factors by factor analysis, which ~~were was~~ further named as Big Five personalities. ~~These second-order factors This extends~~ the use of 16PF, which could analyze ~~a person's~~ personality in detail using primary factors, also grant an overview of ~~thea~~ person's behavior using global factors.

b2) Further work of ~~reducing items~~; ~~reduces~~

Some extremely short scales, such as ~~the~~ 10-items ~~version~~ (TIPI for Big Five, in Gosling et al., 2003), have been developed. Therefore, ~~it is possible to further reduce the number of items for better proceeding with the research for application reasons, reducing items numbers is an important step~~.

批注 [Hc3]: 没有说明为何举例的研究证明了我们的研究是有价值的。另外，我们研究的目标和价值是什么在这里要写明白。

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批注 [Hc4]: 需要说明是上文提到的哪个工具的新版本。

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c) Research question based on inspiration

Extending SCL90 would ~~both~~ benefit ~~both~~ the future study; and the ~~industry-industrial~~ applications. ~~So, the research is supposed to answer the following questions are:~~

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Q1) By the advancement of machine learning, including nonlinear and symbolic prediction methods, is it possible to use subscales in SCL90 to predict resilience more accurately than linear models?

Q2) If we reduce the number of items of involved subscales in SCL90, will the prediction be affected?

d) Impact beyond ~~the scientific community~~

~~The applicability of this research is obvious. It offers a multi-functional SCL90, and is much easier for application~~

批注 [Hc5]: 第 7 部分标题中是 scientific impact, 7. d 的标题变成了 beyond the scientific community, 具体要表达什么需要确认。

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进入研究计划的后半段，除了注意上述的一些问题外，我们还特别留意前后表达的一致性，进一步提升文章的完整度。



~~since its shorter length.~~ It is obvious that the result of this research, a multi-functional SCL90 could be used in more scenarios, and it is easier to be applied for its shorter length.

8. Research methods and materials to be used and ~~its~~ their significance for the research project

a) Study design and research materials

The research would use the SCL90 survey along with relevant scales (Ways of Coping scale, and CD-RISC) in online surveys. The survey would be conducted in typical countries like Finland. A series of analysis among subscales would be done, including linear methods, such as ~~principle~~ principal component regression, partial least square regression, and elastic net. Nonlinear methods would include MARS nonparametric regression. Symbolic prediction methods will also be used.

批注 [166]: 研究结果的具体应用场景和作用到目前还是没有明确的说明, 需要补充。

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9. Preliminary plan on the collection, usage, and storage of the research material

a) About participants' data

Participants' age must be over 16, and they should have normal literacy ability at least.

For data collection, online surveys would be done via Amazon Mechanical Turk and Qualtrics, for example. Data cleaning would be done afterwards, especially in SCL90 with a procedure developed in my work (like filtering out people who choose 1 for all items, etc.).

Participants must sign an informed consent before ~~data being collected~~ collecting data. In the consent, participants would be told that their data is only accessible for the purpose of academic research, ~~not for~~ rather than commercial use. Also, they always have the right to access their own data at any time, and ~~ask about~~ be informed of how their data has been and would be used.

b) About scales

Three scales, SCL90, Ways of Coping scale, and CD-RISC, are used only for research purposes. No commercial use would be involved.

10. Ethical issues

a) Ethical issues related to methods and data collection

What participants should do is filling in the questionnaire. No harmful physical stimulus or data collection devices will be used.

b) Ethical issues in conducting the research

~~The target is open for people~~ Anyone who ~~has~~ have normal literacy ability of age over 16 ~~could be the survey participant~~.
~~No~~ There are no other special ethical concern is foreseen by far considerations.

4.2 套磁

与导师套磁是博士申请中非常重要的一个阶段, 因为申请者与导师会在这个环节中建立第一次沟通, 导师也会形成对申请者初步的印象, 并对申请者的科研能力有初步的判断, 而初印象会在很大程度上影响申请的结果。

为了充分把握住每一次与导师沟通的机会, 申请者须提前搜集信息, 并对导师科研经历有充分了解, 特别是要明确知道导师的研究领域和方向。在正式和导师沟通时, 申请者要突出自己对导师研究方向的兴趣, 和想要与导师一起做研究的决心。除了邮件正文, 不要忘了附上自己的简历和初步的研究计划, 让导师能够快速了解你的学术背景和科研规划。

下面是某位学员向导师发送的第一封邮件。我们在这封邮件中, 首先开门见山地指明了想要申请博士的动机, 然后简要点出了导师的研究方向。紧接着, 我们表达了之前的研究经历和成果和导师科研方向有关, 并表达出了自己在这个方向的兴趣。最后, 我们附



上了研究计划和简历，恳请导师给出反馈。这样的一封邮件，简明扼要，重点突出，能够给导师留下深刻印象。

Respected [redacted]

Thank you for opening this letter.

I am [redacted] hoping to apply for a PhD position of psychology. Fortunately, I found on the [redacted] website that a vacant position was about to be opened for application. What's more, I noticed that the researches of your [redacted] Occupation, psychocardiology and sleep (OPS) group show a lot in common with my research direction.

As a graduate student in Psychology, I have always been interested in this field and finished productive researches. I highly want to carry out more research in the future. Therefore, I believe this position will be an ideal choice.

I have contacted Mr. [redacted] and understood that I need to get in touch with you before the application process officially begins, so I write this letter to express my greetings and show you my [redacted] PhD-project description titled as [redacted] Monitoring Protocol. (You can download the file from the attachment of this email.)

With all due respect, may I ask you to read my proposal and give me the evaluation on its feasibility? I am looking forward to your reply.

Yours Sincerely,
[redacted]

沟通原因
导师研究方向
附上研究计划

果然，导师给出了非常积极的反馈，并针对我们的研究计划提出了一些问题。这是一个非常积极的信号，说明导师对我们的研究很感兴趣，并仔细阅读了我们的研究计划。下面是导师邮件回复的截图。

Dear [redacted]

Thank you for the email. Your research proposal looks very interesting, however we have some concerns which may question the feasibility of the project. For example, it is somewhat unclear what is going to happen in step 1, and how can one get information about CVD-risk (it may take 40-50 years before possible CVD events). We are also unsure about the Boolean Net procedure. We have some ethical concerns with Step 3, also step 4, in addition fMRI may be difficult to do due to limited resources.

All the best,
[redacted]

在认真思考导师提出的问题上，我们和学员一起准备了完整的回答，并第一时间向导师传达了我们的想法。由于导师提出了 4 个具体的问题，我们也在回答中分 4 点具体回答了这些问题。下面是我们回答问题的邮件截图。

Dear Prof.,

Thanks for your reply, and below are my response to your questions.

1. For the tool developed in step 1, examples are models in today's smart bands sold in the market, like Samsung smart band, which uses HR measures to monitor psychological variables, though probably not in real-time, i.e. Stress.
2. For feasibility problems concerning step 1, actually it is not a longitudinal study which would take a couple of decades. It may be within a short period, like one week to 6 months, of a comparison study between normal people and coronary patients. This is suitable for gathering representative data of daily HRV measures, emotion states, and personality traits, which would help to model the psycho-physiological relationship among these measures. Therefore, it is a feasible step.
3. Continuing from point 2, if coronary patients are not available, a group of people who have high scores on Framingham Scale, which indicates the risk of getting heart disease in the next decade, would also be a feasible alternative plan. And also for the inavailability of fMRI in step 4, we could extend tool research based on coronary patients in step 1 to people who have high scores on Framingham score if coronary patients are available. And the design is somewhat similar to step 1.
4. As for Boolean Net, you can consult the detail in R cran, a package named "Boolnet". <https://cran.r-project.org/web/packages/BoolNet/>. It is a correlation network analysis method among a set of true/false variables. In the network, a true value of a link between a pair of variables means variable A in a prior observation would "contribute" to variable B in the next observation.
In genetics, a typical usage of this method is to analyze gene effects of different steps of a cell cycle.
I propose that this method would also be useful in analyzing life events effect to modeled HRV event (emotion state modeled in step 1) in "weekly circles" or "month circles".
5. For ethical consideration in step 3, I wonder what it is.
If the consideration is alpha wave intervention, I would suggest to use Breathing exercise which also has been proposed as a useful intervention method without any device support.
Also, if the consideration is privacy, then we could change the target group to our whole sample, in other words both normal people and high risk people, just to see the effect of intervention method on modeled HRV events.

All the best,
[redacted]



在看完我们的回答后，导师在第二次回复中给出了更加积极的回复，表示自己会和同事一起讨论我们的研究计划。这标志着我们的申请成功进入了下一个阶段。下面是导师第二次回复的邮件截图。

Dear [REDACTED]

I am sorry for my late reply to your email, I will forward this to my colleagues and see what they think about the feasibility of your research proposal. Will let you know as soon as we have discussed it!

Best,
[REDACTED]

4.3 申请规划

在为学员提供申请规划时，我们的参考基准主要来源于两方面，一是院校招生的规律和趋势，二是咨询老师的申请经验。这两方面相结合，可以保障我们的申请规划既符合学员自身的特点，满足学员的诉求，提高申请的成功率。

非常感谢你能够读到此处。

KD 博士一直努力通过长期的数据分析和资深的行业经验，总结院校博士招生规律，从而开创海外博士申请的新模式。在这种新模式下，我们能够帮助中国优秀学子扫清申请路上的障碍，帮助更多优秀人才走出国门。

It is a great course. Be part of it.



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