# 物联网 AI 驱动的医学信息数据分析

四川大学匹兹堡学院可靠性与智能风险管理实验室（RIRM Lab）Focused Research Extended Experience Program (FREE Scholar) 正在招聘一名科研助理。实验室依托四川大学匹兹堡学院，聚焦人工智能驱动的医疗健康监测、智能系统可靠性优化及风险建模等前沿交叉领域，拥有国际化科研团队与先进实验平台，并与国内外顶尖高校、医疗机构及科技企业保持深度合作，致力于推动具有产业转化价值的创新研究。

**项目描述：**

本项目围绕实验室三大研究方向——AI+医疗健康监测、AI 系统可靠性、随机过程与可靠性，开展系统化理论建模与实验验证。研究内容包括利用深度学习对临床与远程 IoT 设备采集的医学信息数据进行实时分析与洞察，挖掘关键健康指标并实现趋势预测；构建智能系统故障风险模型并实现早期预警，以及基于随机过程模型模拟人工假体老化并进行寿命预测。项目将结合临床设备退化数据与仿真平台，旨在提升医疗监测设备的可靠性与风险预警能力，为智能医疗系统的安全运行提供决策支持。

**职位概述：**

科研助理将参与项目全流程研究，包括 SCI 级文献调研、算法开发与优化、随机过程退化模型构建与仿真、数据预处理与可视化以及模型验证，并协助撰写高水平学术论文、专利及项目申请材料。工作地点位于四川大学江安校区（成都市双流区），薪资待遇为学士 6000 元/月、硕士 8000 元/月，享受五险一金及高水平学术会议资助。优秀者有机会获得海外全奖博士推荐并参与国家重点研发计划、华西医院“1・3・5 工程”等重大课题。

**申请要求：**

应聘者需具备工业工程或计算机基础，熟练掌握 Python、Matlab 或 R 编程等至少一种编程语言，具备机器学习、深度学习或运筹优化算法经验者优先，并具有良好的英文读写与 SCI 论文撰写能力。学历要求硕士及以上（优秀本科生可破格考虑），优先专业包括计算机科学、工业工程、数据科学、应用数学及统计学等方向。应聘者应富有科研热情、创新思维，并具备较强的团队协作与沟通能力。

**指导老师简介：**

王常玺博士现任四川大学匹兹堡学院工业工程系副教授，四川省省级人才计划项目入选者并获海外高层次留学人才称号，曾任美国高露洁公司技术研发中心数据科学研究员。本科与硕士毕业于哈尔滨工业大学英才班，2021 年于美国罗格斯大学获工业与系统工程博士学

位，同年加入四川大学。王博士长期从事随机过程退化理论、可靠性工程及 AI 故障预测研究，在 IISE Transactions、Reliability Engineering and System Safety、IEEE Internet of Things Journal 等国际期刊发表论文 10 余篇，授权专利 6 项，现主持国家自然科学基金委青年项目、四川省自然科学基金及多项校级交叉学科建设项目，并担任 10 余种国际期刊审稿人。其研究成果曾获 IISE Transactions 年度最佳论文奖（2021）、清华大学全国工业工程博士生学术论坛最佳会议论文奖（2024）等多项荣誉。

**发展机会：**

优秀科研助理可获得强推海外全奖博士机会（2025 年已成功推荐至普渡大学、宾州州立大学、罗格斯大学、印第安纳大学等顶尖高校），参与国家重点研发计划、华西医院“1・3・5 工程”人工智能项目等重大课题，并与香港大学、美国罗格斯大学等国际团队深度合作，为未来学术晋升和产业发展打下坚实基础。

# IoT-AI-Driven Medical Information Data Analysis

The Reliability and Intelligent Risk Management Lab (RIRM Lab) at Sichuan University – Pittsburgh Institute is recruiting a Research Assistant under the Focused Research Extended Experience Program (FREE Scholar). The lab is based at SCUPI and focuses on AI-driven health monitoring for medical devices, reliability optimization of intelligent systems, and risk modeling. It boasts an international research team and state-of-the-art experimental platforms, and maintains deep collaborations with leading universities, hospitals, and technology companies both domestically and abroad. Our mission is to advance innovative research with strong potential for industrial translation.

Project Description

This project integrates the lab's three core research areas—AI-based health monitoring, AI system reliability, and stochastic process-based reliability theory—through systematic theoretical modeling and experimental validation. Key research tasks include employing deep learning to perform real-time analysis and gain insights into medical information data collected from clinical and remote IoT devices, mining key health indicators and enabling trend prediction; constructing fault-risk models for intelligent systems to enable early warning; and simulating the aging and lifetime prediction of prosthetic implants via stochastic-process models. By combining clinical degradation data with dedicated simulation platforms, the project aims to enhance the reliability and risk-warning capability of medical monitoring devices, thereby providing robust decision-support for the safe operation of intelligent healthcare systems.

Position Overview

The Research Assistant will participate in the full research cycle: conducting SCI-level literature reviews; developing and optimizing algorithms; building and simulating stochastic-degradation models; preprocessing, visualizing, and validating experimental data; and assisting in the preparation of high-impact journal manuscripts, patent applications, and funding proposals. This full-time position is based at the Jiang'an Campus of Sichuan University (Shuangliu District, Chengdu). Compensation is RMB 6,000 per month for bachelor's degree holders and RMB 8,000 per month for master's degree holders, with standard social insurance and housing-fund contributions, plus support to attend high-level academic conferences. Outstanding candidates may be recommended for fully funded PhD programs overseas and will have the opportunity to contribute to national key R&D initiatives and high-profile projects such as the West China Hospital "1 • 3 • 5 Engineering" AI program.

Application Requirements

Applicants should hold a master's degree or above (exceptional bachelor's candidates may be considered) in Industrial Engineering, Computer Science, Data Science, Applied Mathematics, Statistics, or a closely related field. Candidates must have a solid foundation in stochastic processes and reliability theory, proficiency in at least one programming language (Python, Matlab, or R), and preferably experience with machine-learning, deep-learning, or optimization algorithms. Strong English reading and writing skills—especially for SCI-level manuscript preparation—are required.

We seek individuals with passion for research, innovative problem-solving abilities, and excellent teamwork and communication skills.

Principal Investigator

Dr. Changxi Wang is an Associate Professor in the Department of Industrial Engineering at SCUPI. He was selected for the Sichuan Provincial Talent Program and awarded the “High-Level Overseas Study Talent” title. Before joining Sichuan University in 2021, he served as a Data-Science Researcher at Colgate-Palmolive’s R&D Center in the United States. He earned both his BSc and MSc from the Talented Class of Materials Science at Harbin Institute of Technology and completed his PhD in Industrial & Systems Engineering at Rutgers University in 2021. Dr. Wang’s research on stochastic-degradation theory, reliability engineering, and AI-based fault prediction has resulted in over ten publications in journals such as IISE Transactions, Reliability Engineering and System Safety, and IEEE Internet of Things Journal, as well as six granted patents. He currently leads multiple projects funded by the National Natural Science Foundation of China, the Sichuan Provincial Natural Science Foundation, and interdisciplinary initiatives at SCU, and serves as a reviewer for more than ten international journals. His honors include the IISE Transactions Annual Best Paper Award (2021) and the Best Conference Paper Award at Tsinghua University’s National Industrial Engineering PhD Forum (2024).

Opportunities for Career Development

Exceptional Research Assistants will receive strong institutional recommendations for fully funded doctoral studies overseas (in 2025, successful recommendations were made to Purdue University, Penn State University, Rutgers University, and Indiana University). Participants will also contribute to national key R&D projects and the West China Hospital “1 • 3 • 5 Engineering” AI initiative, and collaborate closely with teams at the University of Hong Kong and Rutgers University. This role offers a solid foundation for both academic advancement and industry career growth.