欧长坤 履历

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简介

我在德国慕尼黑大学计算机科学研究所获得了人机交互领域的博士学位。我的研究重点是智能人机交互系统，开发机器学习算法来利用人类的偏好行为，支持他们做出符合大众利益的决策过程。在这个背景下，我利用高效和强大的工程实践来探索系统设计方面的权衡取舍，以实现对真实用户的实际影响。

教育经历

媒体信息 理学博士 (Dr. rer. nat.)   **2019.02 – 2023.04**

慕尼黑大学   慕尼黑, 德国

- **导师**: *Prof. Dr.-Ing. Andreas Butz* (第一导师)*, Prof. Dr. Eyke Hüllermeier* (第二导师)*, Prof. Dr.-Ing. Marc Stamminger* (第三导师).

人机交互 科学硕士 (M.Sc.)   **2016.10 – 2019.01**

慕尼黑大学*; 总成绩: 1.63 (最高 1.0) 介于 "优秀" 和 "好" 之间*   慕尼黑，德国

- **毕业论文**: "理解并预测网络浏览行为"
- **导师**: *Dr. Daniel Buschek, Dr. Malin Eiband, Prof. Dr. Heinrich Hußmann*

软件工程 工程硕士学生   **2016.08 – 2016.09**

电子科技大学   成都, 中国

计算机科学 工程学士 (B.Eng.)   **2012.09 – 2016.07**

西南民族大学*; 总成绩: 3.74（最高 4.0），专业排名第 1（专业总人数 154）*   成都，中国

- **毕业论文**: "智能手表的非接触式备择交互模式的设计"
- **导师**: *Prof. Dr. 陈雅茜*

高考   **2000.09-2012.07**

总成绩: 512（最高 750，第一/二/三本分数线：520/451/357）   怀化，中国

工作经历

高级软件工程师   **2022.09 – 至今**

Sixt SE   慕尼黑，德国

- **研发相关**: 设计并研发自动定价系统

研究员   **2018.04 – 2023.03**

慕尼黑大学   慕尼黑，德国

- **研究相关**: 研究人机闭环机器学习 3D 图形系统
- **教学相关**: 教授、管理与组织 12 多门课程，指导超过 20 名学生的毕业和研讨班论文
- **研发相关**: 与企业伙伴 WAY digital solutions 共同研发 3D 图形处理引擎，主要负责后端网格处理系统；开发迁移并维护使用超过 17 年的大学 CMS 系统和一个超过 13 年的内部协作系统

后端工程师（远程）   **2018.04 – 2019.01**

LabEx Technology Ltd   慕尼黑，德国

- **作为研发负责人**: 负责海外产品的研发工作；主导了产品从单体架构向微服务架构的转型；产品服务端实例（AWS/阿里云）支持从水平扩容 20 到 200 的水平扩容；在职期间用户数从 5k 增长到 30k。
- **作为研发人员**: 使用 Go 开发了一个可扩展的远程桌面代理（支持 WebSocket 到 VNC/RDP/SSH 协议的转译）；开发了一个多云资源管理的微服务（允许跨不同云提供商的服务抽象，支持 AWS 和阿里云，超过 15 种云产品，比如 IAM/EC2/VPC 等），并被超过 10k 用户使用；开发了一个类似于 Kubernetes 的容器和实例混合管理服务
- **技术栈**: 前端: Vue, jQuery, Webpack, Electron; 后端: Go, Cgo, Gin, Beego, gRPC, MySQL, MongoDB, Redis, Hypervisor, Nginx, Docker, Kubernetes, AWS, AlibabaCloud, etc

全栈工程师（兼职）   **2017.11 – 2018.05**
Rocketlingo UG   慕尼黑，德国

◦ **作为研发人员**: 开发了一个语音助手，用过实时语音识别与合成来帮助用户提高语言技能（支持 Web 端和 Alexa 端），并优化了音频流传输以及多语言识别的容错。
◦ **技术栈**: TypeScript; WebSocket; Angular; Google Cloud STT and TTS; Sklearn; Voice Recognition; 等

软件工程师（实习）   **2016.06 – 2016.09**
Shiyanlou   成都，中国

◦ **作为开发者**: 开发了一个跨平台的桌面客户端；开发了一个内容推荐系统；部署并维护了一个内部数据分析系统。
◦ **作为内容创作者**: 编写了超过 20 门关于 C++ 的学习教程
◦ **技术栈**: C++; Python; MongoDB; Collaborate Filtering; Elasticsearch; Logstash; Kibana; Redis; Electron, etc.

开源贡献

一份公开统计显示我已获得超过 18.2k star，并提交过超过 14.2k 次代码，共贡献过超过 30 个开源项目。另一份公开的贡献排名显示我是排名前 200 的德国开发者并是排名前 100 的中国开发者。参见 github.com/changkun 查看更多编写的软件、框架和工具。这里列出了一些开源活动和组织：

• **Go（组织成员）**: Go 语言是一门由来自 Google 的一个开发者团队推出的编程语言，在全球拥有超过两百万开发者。我是该组织的成员之一（共 163 人），目前负责维护 x/mobile 及相关构建器，同时还活跃向运行时及标准库提交贡献
• **fyne（组织成员）**: fyne 是一个开源的 GUI 框架，我是组织的核心成员之一（共 12 人），主要关注在图形和移动端驱动以及性能改进。
• **golang.design（创建者）**: 我是组织的创建人，该组织目前发布了超过 25 款软件项目并共计 6 名成员。从 2020 年 9 月至今，已拥有超过 465k 访问次数和超过 66k 历史访问者。
• **Go 夜读（组织成员）**: 我是该组织的核心成员。社区每周组织公开技术讲座，目前有 6.35k+ 订阅者，组织了 132 场公开讲座。我贡献了 7 个演讲，它们是观看次数最多的演讲之一。
• **掘金翻译社区（组织成员）**: 主要贡献者，将 50 多篇英文文章翻译成中文。
• **其他贡献**: Tensorflow (164+ stars), etcd (39.6k+ stars), etc.

职业技能

职业技能水平通常取决于领域以及比较对象，因此这里列出了经验的年份和一个主观估计（中级、高级或专家）：

• **领域**: 计算机图形学 (3D 渲染和几何处理，3 年本科教学经验，2 年硕士教学经验，使用 Blender/OpenGL/Metal/three.js，高级); 机器学习 (1 年硕士教学经验，Andrew Ng 的深度学习课程证书（ID: QGH8ZVJ6J2L2），使用 Sklearn/Tensorflow/PyTorch 等，高级); 数据分析 (3 年博士研究经验，使用 numpy/seaborn/pandas 等, 高级); *Web* 开发 (2 年工业后端工程研发经验，使用 Go/React 等，高级).

• **语言**: *Go* (超过 5 年使用经验, 专家); *Python* (超过 4 年使用经验, 高级); *JavaScript/TypeScript* (超过 5 年使用经验, 高级); *C/C++* (超过 2 年使用经验, 中级); *LaTeX* (超过 10 年使用经验, 中级)。我还会说中文（母语）；英语（专业商务流利）；德语（基础）

奖项与荣誉

ACM SIGCHI 特殊表彰 (CHI 20)   **2019.11**
优秀审稿   慕尼黑，德国

西门子 AI 实验室黑客马拉松   **2017.11**
二等奖   慕尼黑, 德国

国家奖学金   **2016.09**
电子科技大学   成都, 中国

本科优秀毕业论文   **2016.06**
西南民族大学   成都, 中国

省优秀毕业生   **2016.01**
四川省   成都, 中国

优秀学生奖学金	**2015.11**
西南民族大学	成都, 中国
学生创新年度优秀项目	**2015.06**
西南民族大学	成都, 中国
计算机作品赛	**2015.05**
四川省二等奖	成都, 中国
国家奖学金	**2014.09**
西南民族大学	成都, 中国
美国数学建模竞赛	**2014.04**
一等奖（*Meritorious Winner*）	成都, 中国

出版物

文章

- **Changkun Ou**. Sven Mayer, Daniel Buschek, Andreas Butz. 2024. *Rethinking Opinion Measurement Interfaces for Human-in-the-Loop Optimization*. In ACM Transactions on Computer-Human Interaction. ACM, New York, NY, USA, 28 pages. SUBMITTED.

- Yaxi Chen, **Changkun Ou**. 2016. *Combining Touch Biometrics and Motion Sensors for Hand Posture Recognition and User Authentication System*. In Journal of Southwest University for Nationalities (Nature Science Edition). 7 pages. https://doi.org/10.11920/xnmdzk.2016.04.011

- Yaxi Chen, **Changkun Ou**, Zhaoyang Guo. 2014. *Space interactions based on monocular vision and simple gestures*. In Journal of Southwest University for Nationalities (Natural Science Edition). 6 pages. https://doi.org/10.3969/j.issn.1003-4271.2014.06.13

会议论文集

- **Changkun Ou**, Sven Mayer, Andreas Butz. 2023. *The Impact of Expertise in the Loop for Exploring Machine Rationality*. In 28th International Conference on Intelligent User Interfaces (IUI '23), March 27-31, 2023, Sydney, NSW, Australia. ACM, New York, NY, USA, 15 pages. https://doi.org/10.1145/3581641.3584040

- Francesco Chiossi, Luke Haliburton, **Changkun Ou**, Andreas Butz, Albrecht Schmidt. 2023. *Short-Form Videos Degrade Our Capacity to Retain Intentions: Effect of Context Switching On Prospective Memory*. In the 2023 ACM Conference on Human-Computer Interaction (CHI'23). ACM, New York, NY, USA, 14 pages. https://doi.org/10.1145/3544548.3580778

- Dennis Dietz, Carl Oechsner, **Changkun Ou**, Francesco Chiossi, Fabio Sarto, Sven Mayer, Andreas Butz. 2022. *Walk This Beam: Impact of Different Balance Assistance Strategies and Height Exposure on Performance and Physiological Arousal in VR*. In 28th ACM Symposium on Virtual Reality Software and Technology (VRST '22). ACM, New York, NY, USA, Article 32, 12 pages. ♀ **Best Paper Award**. https://doi.org/10.1145/3562939.3567818

- **Changkun Ou**, Daniel Buschek, Sven Mayer, Andreas Butz. 2022. *The Human in the Infinite Loop: A Case Study on Revealing and Explaining Human-AI Interaction Loop Failures*. In Mensch und Computer 2022 (MuC'22). ACM, New York, NY, USA, 11 pages. ♀ **Honorable Mention Award**. https://doi.org/10.1145/3543758.3543761

- **Changkun Ou**, Daniel Buschek, Malin Eiband, Andreas Butz. 2021. *Modeling Web Browsing Behavior across Tabs and Websites with Tracking and Prediction on the Client Side*. arXiv preprint. 10 pages. https://arxiv.org/abs/2103.04694.

- Kai Holländer, Luca Schellenberg, **Changkun Ou**, and Andreas Butz. 2020. *All Fun and Games: Obtaining Critical Pedestrian Behavior Data from an Online Simulation*. In Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems (CHI EA '20). ACM, New York, NY, USA, 9 pages. https://doi.org/10.1145/3334480.3382797

- **Changkun Ou**, Yifei Zhan, Yaxi Chen. 2019. *Identifying Malicious Players in GWAP-based Disaster Monitoring Crowdsourcing System*. In the 2nd International Conference on Artificial Intelligence and Big Data (ICAIBD). IEEE. New York, NY, USA, 10 pages. ♀ **Best Paper Award**. https://doi.org/10.1109/ICAIBD.2019.8836972

书籍

- **Changkun Ou**. 2023. *The Elements of Go: Under the Hood*. To appear in Posts & Telecom Press. https://golang.design/under-the-hood/

- Quancheng Rao, **Changkun Ou**. 2022. *The Handbook of Go Programming Interviews*. China Machine Press. ISBN: 9787111702429. https://golang.design/go-questions

- **Changkun Ou**. 2021. *Modern C++ Tutorial: C++11/14/17/20 On the Fly*. In GitHub. 89 pages. https://changkun.de/modern-cpp

技术报告

- **Changkun Ou**. 2021. *(Generic) Functional Options Pattern.* In the golang.design Research. 10 pages. https://golang.design/research/generic-option.pdf

- **Changkun Ou**. 2021. *The Ultimate Channel Abstraction.* In the golang.design Research. 14 pages. https://golang.design/research/ultimate-channel.pdf

- **Changkun Ou**. 2021. *A Concurrent-safe Centralized Pointer Managing Facility.* In the golang.design Research. 14 pages. https://golang.design/research/cgo-handle.pdf

- **Changkun Ou**. 2021. *Scheduling Function Calls with Zero Allocation.* In the golang.design Research. 17 pages. https://golang.design/research/zero-alloc-call-sched.pdf

- **Changkun Ou**. 2020. *Pointers Might Not be Ideal as Arguments.* In the golang.design Research. 10 pages. https://golang.design/research/pointer-params.pdf

- **Changkun Ou**. 2020. *Eliminating A Source of Measurement Errors in Benchmarks.* In the golang.design Research. 10 pages. https://golang.design/research/bench-time.pdf

其他

- Julius Girbig, **Changkun Ou**, and Sylvia Rothe. 2022. *Generative 3D Animation Pipelines: Automating Facial Retargeting Workflows.* In Workshop on "AI-Generated Characters: Putting Deepfakes to Good Use" of CHI '22: ACM CHI Conference on Human Factors in Computing Systems. New Orleans, LA, USA, 4 pages. https://changkun.de/paper/deepfake.pdf

- Jingyi Li, **Changkun Ou**, Yong Ma. 2019. *Cultivation and Incentivization of HCI Research and Community in China: Taxonomy and Social Endorsements.* In Workshop on "HCI in China: Research Agenda, Education Curriculum, Industry Partnership, and Communities Building" of the 2020 CHI Conference on Human Factors in Computing Systems (CHI EA '19). Glasgow, UK, 7 pages. https://changkun.de/paper/china.pdf

- **Changkun Ou**. 2018. *An Introduction to Recent Mobile Affective Inference Techniques: Methods, Applications and Challenges.* In Advanced Seminar Media Computer Science, LMU Munich. 9 pages. https://changkun.de/paper/emotions.pdf

- Matthias Geiger, **Changkun Ou**, Cedric Quintes. 2017. *WatchOut: A Road Safety Extension for Pedestrians on a Public Windshield Display.* arXiv preprint. 5 pages. https://arxiv.org/abs/1905.05390

- **Changkun Ou**, Mu Huang, Mengxin Shi, Jiang Cheng. 2014. *A Study in Keep-Right-Except-To-Pass Rule.* In the Mathematical Contest in Modeling. 35 pages. ♛ **Meritorious Winner** https://changkun.de/paper/keepright.pdf

演讲

- Changkun Ou. 2022. *The Decision Maker's Dilemma: or how I stopped struggling with possible choices.* LMU Munich Internal Doctoral Colloquium. Chiemsee, Germany. https://changkun.de/talk/dilemma.pdf

- Changkun Ou. 2022. *Generics in Go 1.18.* The TalkGo Meetup. Virtual Event. https://changkun.de/talk/generics118.pdf

- Changkun Ou. 2022. *What is A Rational Community Discussion?* The TalkGo Meetup. Virtual Event. https://changkun.de/talk/rational.pdf

- Changkun Ou. 2021. *Can we compute the free-will?.* LMU Munich Internal Doctoral Colloquium. Venice, Italy. https://changkun.de/talk/polyred6fold.pdf

- Changkun Ou. 2021. *Delicate Dance: Preferences in Interactive Meshing.* LMU Munich Internal Doctoral Colloquium. Virtual Event. https://changkun.de/talk/polyred5star.pdf

- Changkun Ou. 2020. *A Future of Polygon Reduction.* LMU Munich Internal Doctoral Colloquium. Venice, Italy. https://changkun.de/talk/polyred4us.pdf

- Changkun Ou. 2020. *Reliable Benchmarking.* The TalkGo Meetup. Virtual Event. https://changkun.de/talk/gobench.pdf

- Changkun Ou. 2020. *Go 2 Generics? A (P)review.* The TalkGo Meetup. Virtual Event. https://changkun.de/talk/go2generics.pdf

- Changkun Ou. 2020. *A Study on Go Timer Implementation.* The TalkGo Meetup. Virtual Event. https://changkun.de/talk/timer.pdf

- Changkun Ou. 2019. *Technological Outlook.* Lecture Online Multimedia. Munich. https://changkun.de/talk/omm9.pdf

- Changkun Ou. 2019. *Understanding Communicating Sequential Processes.* The TalkGo Meetup. Virtual Event. https://changkun.de/talk/csp.pdf

- Changkun Ou. 2019. *Simplicity is complicated: On the balance of performance and knobs.* LMU Munich Internal Doctoral Colloquium. Vienna, Austria. https://changkun.de/talk/polyred2what.pdf

- Changkun Ou. 2019. *Real-world Go Concurrency Bugs.* The TalkGo Meetup. Virtual Event. https://changkun.de/talk/bug.pdf

- Changkun Ou. 2019. *Internals of Channel and Select in Go.* The TalkGo Meetup. Virtual Event. https://changkun.de/talk/channel.pdf

- Changkun Ou. 2019. *Identifying Malicious Players in GWAP-based Disaster Monitoring Crowdsourcing System.* ICAIBD. Chengdu, China. https://changkun.de/talk/gwap.pdf

- Changkun Ou. 2019. *A Glimpse to the Advances of Mesh Representation Learning.* Internal Doctoral Colloquium Spring. Bernried, Germany. https://changkun.de/talk/polyred1step.pdf

- Changkun Ou. 2019. *Understanding and Predicting User Browsing Behavior.* Masters Defence Presentation. Munich, Germany. https://changkun.de/talk/master.pdf

- Changkun Ou. 2018. *On the development of Quantified UX Metric.* Design Workshop II, LMU Munich. Munich, Germany https://changkun.de/talk/qux.pdf

- Changkun Ou. 2018. *Capsule Network with Routing Mechanism.* Advanced Seminar Deep Learning, LMU Munich. Munich, Germany. https://changkun.de/talk/capsnet1.pdf, https://changkun.de/talk/capsnet2.pdf

- Changkun Ou. 2018. *Understanding Generalization in Deep Learning.* Advanced Seminar Deep Learning, LMU Munich. Munich, Germany. https://changkun.de/talk/generalization.pdf

- Hermann Redich, Patrick Börzel, Isabella Galter, Collin Leiber, Changkun Ou. 2018. *Convolutional Neural Networks from Zero to Hero.* Advanced Seminar Deep Learning, LMU Munich. Munich, Germany. https://changkun.de/talk/cnn.pdf

- Changkun Ou. 2016. *Mathematical Modeling Tutorial.* TouTube. Virtual Events. https://changkun.de/s/playlist/math-modeling

毕业论文

- **Changkun Ou**. 2023. *The Intelligence in the Loop: Empirical Explorations and Reflections.* To appear in the Institute of Computer Science. LMU Munich. 151 pages. **Ph.D. Thesis**.

- **Changkun Ou**. 2019. *Understanding and Predicting Web Browsing Behavior.* In the Institute of Computer Science. LMU Munich. 70 pages. **Master Thesis**. **Sehr gut (1,0)**. https://changkun.de/thesis/master.pdf

- **Changkun Ou**. 2016. *Designing Alternative Contact-free Control Modalities for Smart Watches.* In the Institute of Computer Science and Engineering. Southwest University of Nationalities. 47 pages. **Bachelor Thesis**. ♀ **Excellent Bachelor Thesis**. https://changkun.de/thesis/bachelor.pdf

教学经历

Lecture Computer Graphics	**2020/2021/2022**
As teaching assistant and instructor at LMU Munich. For B.Sc. students, approx. 200 students each year.	*Summer*
Authored materials: https://changkun.de/s/teach/cg	
Practical Geometry Processing	**2020/2021**
As lecturer and instructor at LMU Munich. For M.Sc. students, 6 students each year.	*Winter*
Authored materials: https://changkun.de/s/teach/gp	
Lecture Information Visualization	**2021**
As teaching assistant at LMU Munich. For M.Sc. students, approx. 100 students.	*Winter*
Authored materials: https://changkun.de/s/teach/iv	
Lecture Online Multimedia	**2019**
As teaching assistant and guest speaker at LMU Munich. For M.Sc. students, approx. 180 students.	*Winter*
Authored materials: https://changkun.de/s/teach/omm	
Seminar Advances in Computer Graphics	**2019**
As event organizer and supervisor at LMU Munich. For M.Sc. students, 6 students.	*Winter*
Seminar Advanced Media Informatics	**2019/2021**
As supervisor at LMU Munich	*Summer/Winter*
Lecture Deep Learning and Artificial Intelligence	**2018**
As student tutor at LMU Munich.	*Winter*
Authored manuscripts: https://changkun.de/s/teach/dl	

Lecture Machine Learning	**2018**
As student tutor at LMU Munich.	*Summer*
Authored manuscripts: https://changkun.de/s/teach/ml	

Lecture Human-computer Interaction	**2015**
As student tutor at Southwest University for Nationalities.	*Summer*

Theses/Seminars Supervision	**2020/2021/2022**

As supervisor

- **Bachelor Thesis**: 2022. Shiyi Gou. *Exploring, Assisting, and Improving Human Rationality using Computational Approaches.*
- **Master Thesis**: 2022. Johannes Merkt. *Procedural Modeling with Nodes.*
- **Master Thesis**: 2022. Kehong Deng. *High Dimensional Trajectory Data Interpretation and Visualization.*
- **Bachelor Thesis**: 2022. Nicolas Mogicato. *On-the-fly Mesh Streaming.*
- **Bachelor Thesis**: 2022. Benjamin Sühling. *Mesh Repairing using Deep Networks.*
- **Bachelor Thesis**: 2022. Zihan Kong. *Real Time Ray Tracing using Generative AI.*
- **Bachelor Thesis**: 2022. Gerhard van Nooy. *PAppearance-preserving Mesh Processing in Hierarchical Networks.*
- **Master Thesis**: 2021. Kevin Nsieyanji. *Scheduling, Profiling and Optimizing Hybrid Renderer.*
- **Bachelor Thesis**: 2021. Feng Chen. *Exploiting Human Preferences with Reinforcement Learning Approaches.*
- **Master Seminar**: 2021. Darina Cvetanova. *Recent Advances in Neural Rendering for 3D Applications.*
- **Bachelor Thesis**: 2021. Julius Girbig. *Automated Facial Rig Registration for Motion Capture.* Cosupervision: Prof. Dr. Sylvia Rothe.
- **Bachelor Thesis**: 2021. Oliver Möller. *Web User Interface Optimization from Preferential Ratings.*
- **Bachelor Thesis**: 2021. Christian Schmidt. *Progressive BVH Refinement in Interactive Ray Tracing.*
- **Master Thesis**: 2021. Elena Liebl. *Evaluating Human Expertise in 3D Model Simplification.*
- **Master Thesis**: 2021. Samuel Eiler. *Meshless Neural Rendering.*
- **Master Seminar**: 2020. Maksimilians Verbickis *Understanding and Evaluating Human Preferences in 3D Modeling.*
- **Master Seminar**: 2020. David Dodel, Ofek Lewinsohn. *Geometric Processing in Learning.* Cosupervision: Dennis Dietz.
- **Master Seminar**: 2020. Felix Dietz, Daniel Neumann. *Reinforcement Learning in Physics-based Simulation.* Cosupervision: Dennis Dietz.
- **Master Seminar**: 2020. Cecilia Thümmler. *Human Perception and Preference in 3D Modelling.*

其他活动

Reviewing	**CHI '20 - CHI'23**
The ACM CHI Conference on Human Factors in Computing Systems	

Reviewing	**MobileHCI' 2023**
The ACM International Conference on Mobile Human-Computer Interaction	

Reviewing	**ICMI' 2022**
The ACM International Conference on Multimodal Interaction	

Reviewing	**IMWUT' 2022**
Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies	

Reviewing	**INTERACT' 2021**
IFIP TC13 International Conference on Human–Computer Interaction	

Student volunteer	**2020**
The ACM CHI Conference on Human Factors in Computing Systems	

Student volunteer	**Aug. 2015**
Conference Smart Graphics 2015	