屈恒

小米集团副总裁、集团技术委员会主席，分管集团质量委员会、集团信息技术部

海淀区新的社会阶层人士联谊会副会长

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联系方式

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教育经历

2003.07——本科——北京航空航天大学——计算机科学与工程系计算机专业

2013.09——硕士——哈尔滨工业大学——计算机系软件工程专业

工作经历

- 2005.04-2006.06，北京金山软件有限公司，金山无线事业部，软件工程师
- 2006.06-2008.06，北京金山软件有限公司，金山词霸，项目经理
- 2010.04-2014.02，小米科技有限责任公司，人工智能与云平台-路由器，软件开发工程师
- 2014.03-2017.02，小米科技有限责任公司，生态链，软件工程师
- 2017.02-2018.09，小米科技有限责任公司，生态链，高级总监
- 2018.09-2022.12，小米科技有限责任公司，生态链，总经理
- 2022.12-至今，小米科技有限责任公司，集团总办，集团副总裁、集团技术委员会主席

本人拥有 20 年软件开发、软件产品设计、硬件产品设计、IoT 生态建设经验，

是小米集团创立之初第一批工程师。作为小米初创团队成员之一，曾是 MIUI（现 HyperOS）早期高速发展核心研发力量，小米智能硬件、小米生态链团队早期奠基者，在软件开发和硬件工程领域为小米早期的崛起做出重要贡献。2018 年至 2022 年底担任小米链总经理，创造性地围绕手机进行智能生态布局，不断产出爆品，引领行业发展，助力小米成为全球最大规模的消费级 IoT 平台，对小米集团“手机 x AIoT”战略推进作出重要贡献。

- 【软件开发与硬件工程】MIUI 和米聊最早一批工程师，一年实现 37 个 iOS 版本米聊快速迭代，主导了 MIUI 每周更新迭代模式。从 0 到 1 组建小米路由器团队，推进小米智能家居战略。

- 【从生态链奠基人到总经理】早期负责小米头戴耳机、小米蓝牙耳机产品线；2017 年推动小米生态链国际化进程，在欧洲和亚洲国际市场推出超 30 类国际化生态链产品。2018 年起担任小米生态链总经理，投资孵化超过 170 家生态链公司，华米科技、云米科技、石头科技、九号机器人、趣睡科技等多家生态链公司成功上市，生态链全球收入超过 300 亿元，小米成为全球最大规模消费级 IoT 平台，AIoT 平台连接 IoT 设备数达到 6.99 亿台。此外，小米生态链产品斩获超过 200 项工业设计大奖，其中 8 项获 IF、红点、IDEA 国际设计金奖，助力小米成为国内目前为止荣获国际金奖最多的企业。

- 【技术战略规划】承担“CTO 办公室”职责，制定小米大模型战略，2023 年 8 月小米大模型在百亿内参数大模型中排名第一。推进 AI 基础设施建设规划、信息安全与隐私发展战略、HyperOS AI 发展战略，组建集团硬件、软件、OS、AI 专家组，统一规划和管理集团预研项目。小米自主研发的 AI 技术与功能，每年向手机部、汽车部、中国区、机器人、生态链等业务交付超过 300 项，其中万物追焦、魔法换天、实时字幕翻译、通话降噪、大模型 AIGC 等 70 余项功能成为小米产品重磅卖点。同时推进小米集团质量变革，在中国区、国际部、生态链等成立质量组织，推进 ITR 体系、新国标切换、软件质量提升等质量专项；推进手机部、大家电、生态链成立业务采购委组织，2023 年采购部为集团非生产性采购降本达 8 亿元。

项目经历

- 小米生态链智能硬件产品的产品定义和研发（2017-2022 年）

负责小米智能硬件产品，包含智能手环、手表、扫地机器人、智能门锁、智能摄像、净化器、净水器等产品的产品规划和研发工作。年销售额 300 亿元。通过竞争分析、技术趋势分析、市场用户洞察等方法，明确智能硬件产品路标制定。带领研发、供应链、项目、品质、工业设计等团队共同配合，管理研发到上市全过程。

- 生态链的国际化拓展项目（2017-2022 年）

组建生态链海外业务部，启动并加速了小米生态链产品海外业务的步伐。制定生态链全面出海策略，搭建生态链海外业务平台，推动小米生态链累计超过 200 个产品的出海业务，业规模务增长超过 10 倍，累计创造收入超过 100 亿元。

- 生态链业务的全面运营和管理（2018-2022 年）

负责管理小米集团生态链业务，对业务增长和经营健康负责，支持“手机 x AIoT”的集团战略。2018 年接手生态链团队，从零孵化了智能门锁、显示器、智能手表等多个十亿规模的新品类，也带领路由器、智能音箱、扫地机器人、智能摄像机、生活电器等多个品类成长为行业龙头。同时，通过智能产品的销售，帮助米家 APP 增加了数千万活跃用户，成为中国第一大消费 IoT 平台。在职期间，总结并提出“爆品方法论”，4 家生态链伙伴成功挂牌上市，证明了小米生态链模式的领先性。

- 小米大模型发展战略（2023-2024 年）

制定小米公司大模型（LLM）战略，确定“自研+开放接入”两条腿发展策略。2023 年 4 月成立大模型团队，8 月小米自研大模型正式发布，成为百亿参数内排名第一大模型。同时小米语音助手“小爱同学”快速接入大模型，8 月启动邀请测试，是国内最先升级大模型的语音助手，截至 2024 年初大模型版小爱同学用户已达数百万，在同类产品中体验和规模均处于世界前列。

专利及获奖情况

取得专利

1. 国家标准——净水机水效限定值及水效等级 GB34914-2021——主要起草单位（小米通讯技术有限公司第 1 位）及主要起草人（屈恒第 11 位）——发布时间：2021-12-01，实施时间：2022-07-01。

2. 发明专利——一种获得特征信息的方法、装置及网络设备——第一发明人——20170208。

3. 发明专利——一种网络频段选择方法、装置及路由器——以第二身份以上完成——20170419。

4. 发明专利——灰度升级的方法及装置——以第二身份以上完成———20170616。

5. 发明专利——文件下载方法、装置、路由设备及终端设备——以第二身份以上完成——20180508。

6. 发明专利——嵌入式系统升级的方法、装置及设备——以第二身份以上完成——20170322。

7. 发明专利——无线接入控制方法、装置、路由器及终端——以第二身份以上完成——20180904。

8. 发明专利——一种设置网络连接参数的方法和装置——以第二身份以上完成——20160921。

9. 发明专利——一种客户端升级的方法——以第二身份以上完成——20151028。

10. 发明专利——信息发送方法、信息接收方法及装置——以第二身份以上完成——20200703。

11. 发明专利——一种调用应用程序的方法和装置——以第二身份以上完成——20160330。

12. 发明专利——宽带分配的方法及装置——以第二身份以上完成——20190315。

13. 发明专利——安装应用程序的方法及设备——以第二身份以上完成——20170801。

14. 发明专利——路由器信号强度调节方法及装置——以第二身份以上完成——20180213。

15. 发明专利——下载、启动工具包的方法及装置——以第二身份以上完成——20160608。

16. 发明专利——一种终端登录远程服务器的方法和装置——以第二身份以上完成——20170912。

17. 发明专利——一种控制呼吸灯的方法、装置及设备——以第二身份以上完成——20160608。

18. 发明专利——一种输出提示信息的方法、装置、无线中继器及终端设备——以第二身份以上完成——20181123。

19. 发明专利——一种密码提示的生成方法、装置和终端设备——以第二身份以上完成——20170215。

专业奖项

广东省轻工业联合会科学技术进步奖——基于双通道串联式 RO 技术的高水效长寿命净水器的研发及应用(三等奖)。2021 年 12 月 28 日，广东省轻工业联合会。

Qu Heng

Vice President of Xiaomi Corporation, Chairman of the Group Technical Committee, Overseeing the Group Quality Committee and the Group Information Technology Department

Vice President of Haidian District New Social Strata Association

President of Xiaomi Corporation New Social Strata Association

Contact Information

Email: quheng@xiaomi.com

Educational Background

July 2003: Bachelor's Degree in Computer Science, Department of Computer Science and Engineering, Beihang University

September 2013: Master's Degree in Software Engineering, Department of Computer Science, Harbin Institute of Technology

Work Experience

- April 2005–June 2006: Software Engineer, Kingsoft Wireless Department, Kingsoft Software Co., Ltd. (Beijing)
- June 2006–June 2008: Project Manager, Kingsoft PowerWord, Kingsoft Software Co., Ltd. (Beijing)
- April 2010–February 2014: Software Development Engineer, Artificial Intelligence & Cloud Platform – Router Department, Xiaomi Technology Co., Ltd.
- March 2014–February 2017: Software Engineer, Ecosystem Department, Xiaomi

Technology Co., Ltd.

- February 2017–September 2018: Senior Director, Ecosystem Department, Xiaomi Technology Co., Ltd.
- September 2018–December 2022: General Manager, Ecosystem Department, Xiaomi Technology Co., Ltd.
- December 2022–Present: Vice President of Xiaomi Corporation and Chairman of the Group Technology Committee, Group Executive Office, Xiaomi Technology Co., Ltd.

With over 20 years of experience in software development, software product design, hardware product design, and IoT ecosystem development, Mr. Qu was one of the first engineers to join Xiaomi Corporation at its founding stage. As a member of Xiaomi's core founding team, he was a pivotal R&D force during the early rapid growth of MIUI (now HyperOS), and a founding member of Xiaomi's smart hardware and Ecosystem teams, making significant contributions to Xiaomi's early rise in both software development and hardware engineering. From 2018 to the end of 2022, serving as General Manager of the Xiaomi Ecosystem Department, he innovatively crafted a smart ecosystem strategy centered around mobile devices. He consistently rolled out blockbuster products that set industry trends, enabling Xiaomi to establish the world's largest consumer IoT platform. His work was instrumental in driving forward Xiaomi’s “Smartphone × AIoT” strategy.

- **Software Development and Hardware Engineering:** One of the first engineers for MIUI and Mi Talk, achieving rapid iteration of 37 iOS versions of Mi Talk within one year and pioneering the weekly update model for MIUI. Built the Xiaomi Router team from scratch and advanced Xiaomi's smart home strategy.
- **From the Founder of the Ecosystem Department to the General Manager:** Mr. Qu was responsible for Xiaomi's over-ear headphones and Bluetooth headphones product lines in the early stage. In 2017, he promoted the internationalization of Xiaomi's ecosystem and launched more than 30 categories of internationalized ecosystem products in the European and Asian markets. Since 2018, he has served as the General Manager of Xiaomi's Ecosystem Department, investing in and incubating more than 170 ecosystem companies. Many ecosystem companies such as Huami, Viomi, Roborock, Ninebot, and Qushui have successfully gone public. The global revenue of the ecosystem has exceeded 30 billion yuan, and Xiaomi has become the largest consumer-grade IoT platform in the world, with the number of IoT devices connected to the AIoT platform reaching 699 million. In

addition, Xiaomi's ecosystem products have won over 200 industrial design awards, among which 8 have won the international design gold awards of IF, Red Dot, and IDEA, helping Xiaomi become the company that has won the most international gold awards in China.

- **Technical Strategy Planning:** Mr. Qu assumes the responsibilities of the "CTO Office" and formulates Xiaomi's large language model (LLM) strategy. In August 2023, Xiaomi's LLM ranked first among those with parameters under 10 billion. He drives the planning of AI infrastructure construction, information security, and privacy development strategies, as well as the HyperOS AI development strategy. He organizes expert groups for hardware, software, OS, and AI, and centrally plans and manages research projects. Annually, Xiaomi's self-developed AI technologies and functions deliver over 300 items to business units including the Smartphone Department, Electric Vehicle Department, China Region, Robotics Department, and Ecosystem Department. Over 70 features, such as AI Focus, AI Skyscraping, Real-time Subtitle Translation, Call Noise Reduction, and LLM AIGC, have become key selling points of Xiaomi's products. Simultaneously, he spearheads Xiaomi's quality transformation, establishes quality organizations in the China Region, International Business Department, and Ecosystem Department, and promotes quality initiatives like the ITR system, adoption of new national standards, and software quality enhancement. He also advocates for the establishment of business procurement committees in the Smartphone Department, Major Appliances Department, and Ecosystem Department. In 2023, the Procurement Department achieved 800 million yuan in cost savings for Xiaomi's non-productive procurement.

Project Experience

- Product Definition and R&D of Smart Hardware Products in Xiaomi's Ecosystem (2017-2022)

  Responsible for Xiaomi's smart hardware products, overseeing product planning and R&D for items like smart bands, smart watches, robotic vacuum cleaners, smart door locks, smart cameras, air purifiers, and water purifiers. Achieved annual sales of 30 billion yuan. Clearly defined the roadmap for smart hardware products through competitive analysis, technical trend analysis, and market user insights. Led R&D, supply chain, project, quality, and industrial design teams in collaboration, managing the full process from R&D to product launch.

- International Expansion Project of the Ecosystem (2017-2022)

Established the International Ecosystem Business Department, kick-starting and accelerating the overseas business of Xiaomi's ecosystem products. Formulated a comprehensive overseas expansion strategy for the ecosystem, constructed an overseas business platform, and promoted the overseas business of over 200 ecosystem products. The business scale grew by more than 10-fold, with cumulative revenue surpassing 10 billion yuan.

- Comprehensive Operation and Management of the Ecosystem Department (2018-2022)

Responsible for overseeing Xiaomi Corporation's ecosystem, accountable for business growth and operational well-being, and supporting Xiaomi's “Smartphone x AIoT” strategy. In 2018, took charge of the ecosystem team, incubating several new product categories, each with a scale of one billion yuan, such as smart door locks, monitors, and smart watches from the ground up. Also steered several product categories, including routers, smart speakers, robotic vacuum cleaners, smart cameras, and household appliances, to become industry leaders. Meanwhile, facilitated the Mijia APP in adding tens of millions of active users, enabling it to become China's largest consumer IoT platform with the sales of smart products. During this tenure, summarized and proposed the “Blockbuster Product Methodology,” and four ecosystem partner companies successfully went public, highlighting the leading edge of Xiaomi's ecosystem model.

- Development Strategy of Xiaomi's Large Language Model (2023-2024)

Formulated the large language model (LLM) strategy for Xiaomi Corporation, determining the "self-research + open access" development approach. An LLM team was established in April 2023, and Xiaomi's self-developed LLM was officially launched in August, ranking first among LLMs with parameters within 10 billion. Meanwhile, Xiaomi's voice assistant "Xiaomi Xiaoai" rapidly integrated the large model, with an invitation-only test initiated in August, making it the first voice assistant in China to integrate an LLM. As of early 2024, the LLM-integrated version of Xiaomi Xiaoai had reached several million users, with both user experience and scale ranking among the world's best in similar products.

Patents

1. National Standard – *GB 34914-2021: Water Efficiency Limits and Grades for Water Purifiers* (Leading Drafting Unit: Xiaomi Communication Technology Co., Ltd. [1st rank]; Leading Drafting Contributor: Qu Heng [11th rank]; Issued: 2021-12-01,

Effective: 2022-07-01).

2. Invention Patent – *Method, Apparatus, and Network Device for Obtaining Feature Information* (First Inventor; 2017-02-08).

3. Invention Patent – *Network Frequency Band Selection Method, Apparatus, and Router* (Completed as a contributor ranked 2nd or higher; 2017-04-19).

4. Invention Patent – *Gray Scale Upgrade Method and Apparatus* (Completed as a contributor ranked 2nd or higher; 2017-06-16).

5. Invention Patent – *File Download Method, Apparatus, Routing Device, and Terminal Equipment* (Completed as a contributor ranked 2nd or higher; 2018-05-08).

6. Invention Patent – *Embedded System Upgrade Method, Apparatus, and Equipment* (Completed as a contributor ranked 2nd or higher; 2017-03-22).

7. Invention Patent – *Wireless Access Control Method, Apparatus, Router, and Terminal* (Completed as a contributor ranked 2nd or higher; 2018-09-04).

8. Invention Patent – *Method and Apparatus for Setting Network Connection Parameters* (Completed as a contributor ranked 2nd or higher; 2016-09-21).

9. Invention Patent – *Client Upgrade Method* (Completed as a contributor ranked 2nd or higher; 2015-10-28).

10. Invention Patent – *Information Sending Method, Information Receiving Method, and Apparatus* (Completed as a contributor ranked 2nd or higher; 2020-07-03).

11. Invention Patent – *Method and Apparatus for Invoking Application Programs* (Completed as a contributor ranked 2nd or higher; 2016-03-30).

12. Invention Patent – *Broadband Allocation Method and Apparatus* (Completed as a contributor ranked 2nd or higher; 2019-03-15).

13. Invention Patent – *Application Program Installation Method and Equipment* (Completed as a contributor ranked 2nd or higher; 2017-08-01).

14. Invention Patent – *Router Signal Strength Adjustment Method and Apparatus* (Completed as a contributor ranked 2nd or higher; 2018-02-13).

15. Invention Patent – *Toolkit Download and Activation Method and Apparatus* (Completed as a contributor ranked 2nd or higher; 2016-06-08).

16. Invention Patent – *Method and Apparatus for Terminal Login to a Remote Server* (Completed as a contributor ranked 2nd or higher; 2017-09-12).

17. Invention Patent – *Method, Apparatus, and Equipment for Controlling a*

Breathing Light (Completed as a contributor ranked 2nd or higher; 2016-06-08).

18. Invention Patent – *Method, Apparatus, Wireless Repeater, and Terminal Equipment for Outputting Prompt Information* (Completed as a contributor ranked 2nd or higher; 2018-11-23).

19. Invention Patent – *Password Hint Generation Method, Apparatus, and Terminal Equipment* (Completed as a contributor ranked 2nd or higher; 2017-02-15).

Awards

Received the Third Prize of Guangdong Provincial Light Industry Federation Science and Technology Progress Award on December 28, 2021, for the project *“Development and Application of a High Water Efficiency and Long-Life Water Purifier Based on Dual-Channel Series Reverse Osmosis (RO) Technology”*, awarded by the Guangdong Provincial Light Industry Federation.