**凤黄浩 个人履历**

博士研究生 2019.9.1

计算机视觉与社交机器人实验室

电气与计算机工程学院

丹佛大学

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**科研方向**

机器人；计算机音乐；情感分析；音乐与科技；原声音乐分析；人与机器（人）交互设计；音乐游戏设计；基于人参与的人工智能情感音乐编曲和私人订制；STEM教育中的机器人，艺术和人性；基于VR/AR的交互式音乐游戏设计；计算机视觉；自闭症。

**教育经历**

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| --- | --- | --- | --- |
| 学位 | 教育机构 | 毕业日期 | 专业 |
| 博士 | 丹佛大学电气与电脑科学系 毕业论文：Xylo-Bot: An Automated Music Teaching Robot Platform System for Children with Autism (In Progress最终名称待定) 博士研究生导师：Mohammad H. Mahoor | 2020 | 电气与计算机工程 |
| 硕士 | 丹佛大学电气与电脑科学系 毕业论文：Studying Eye Gaze of Children with Autism Spectrum Disorders in Interaction with a Social Robot 硕士研究生导师： Mohammad H. Mahoor | 2014 | 电气与计算机工程 |
| 本科 | 苏州科技大学电气与信息技术系 毕业设计：安卓应用：汽车信息查询系统 指导老师：谷慧娟 | 2011 | 信息技术 |

**作品：设计，发表论文以及海报**

**设计: *Xylo-Bot: A Toy Musical Robot and Beyond***

首席设计师。 2017 至今 | 设计了一款专为毫无专业音乐训练基础的儿童或成人用于训练基础音乐知识学习与作曲的基于实时动态交互的平台系统。此系统可自定义各类丰富旋律乐曲，且易于一款指定人形机器人演奏。原生与电声均可在一款友善的基于颜色编码的钟琴（马林巴，我称其为X-elophone）演奏出来。[视频连接在此。](https://www.youtube.com/watch?v=VYgz7ipjL1Y)此平台曾在2019年7月的丹佛国际音乐与科技艺术节座谈会上进行现场演示并得到了电音巨匠乔丹.鲁德斯（世界顶级键盘手之一，梦剧院乐队首席键盘手）以及王戈（斯坦福大学音乐学院副教授，CCRMA创始人，艺术设计师，音乐编程软件ChucK首席设计师）的积极正面反馈。

**设计:  *X-elophone: A Revolution of Xylophone***

首席设计师。 2019 至今 | 用一款极其简单便携的11键儿童钟琴，设计出一款全新的可由用户自由选择大调与小调甚至不同器乐声音的可编程全新新钟琴（我称其为X-elophone）。不仅初学音乐者可以用它来学习基础音乐知识，高阶玩家也可以用他来演奏或进行创意表演。 [视频链接在](https://www.youtube.com/watch?v=vmygC5SFcTg)此。 X-elophone 曾与Xylo-Bot一同在2019年7月的丹佛国际音乐与科技艺术节座谈会上进行过首次现场演示，现在此平台和乐器正被用于一项与音乐，机器人和自闭症相关的科研项目。

**同行评审的期刊杂志，会议论文及海报**

**期刊杂志：**

Mihalache, D., Feng, H., Askari, F., Sokol‐Hessner, P., Moody, E.J., Mahoor, M.H. and Sweeny, T.D., 2019. “Perceiving gaze from head and eye rotations: An integrative challenge for children and adults.” *Developmental science*, p.e12886.

Huanghao Feng, Hosein Golshan, Mohammad H. Mahoor, 2018. “A wavelet-based feature extraction approach for emotion classification using the EDA signals”, *Journal of Expert Systems and Applications,* 112, pp.77-86.

**会议：**

Farzaneh Askari, Haunghao Feng, Timothy D. Sweeny, Mohammad H. Mahoor, 2018. “A Pilot Study on Facial Expression Recognition Ability of Autistic Children Using Ryan, A Rear-Projected Humanoid Robot”, *The 27th IEEE-RAS International Conference on Humanoid Robots*, NanJin-Tai’an, China, pp. 790-795.

Farzaneh Askari, Huanghao Feng, Mohammad H. Mahoor, Timothy Sweeny and Anibal Gutierrez, 2018. “How children with autism spectrum disorder recognize facial expressions displayed by a rear-projection humanoid robot”, *INSAR 2018 Annual Meeting (formerly IMFAR)*, Rotterdam, Netherlands

S.M.Mavadati, Huanghao Feng, M.Salvador, S.Silver, A.Gutierrez, M.Mahoor, “Robot-Based Therapeutic Protocol for Training Children, with Autism”, 2016. *25th International Symposium on Robot and Human Interactive Communication, IEEE RO-MAN*, pp. 855-860, New York, NY (RSJ/KROS Distinguished Interdisciplinary Research Award)

S. Mohammad Mavadati, Huanghao Feng, Peyten Sanger, Sophia Silver, Anibal Gutierrez, Mohammad H. Mahoor, 2015. “Using Robots as Therapeutic Agents to Teach Children with Autism Recognize Facial Expression”, *International Meeting for Autism Research (IMFAR)*

Mavadati, S Mohammad; Feng, Huanghao; Gutierrez, Anibal; Mahoor, Mohammad H, 2014. “Comparing the gaze responses of children with autism and typically developed individuals in human-robot interaction”, Humanoid Robots (Humanoids), *2014 14th IEEE-RAS International Conference on Humanoid Robots*, pp. 1128-1133, Madrid, Spain

S.M.Mavadati, Huanghao Feng, A.Gutierrez and M.Mahoor, 2014. “Modeling Eye Gaze of Children with Autism During a Robot-based Therapy Setting”, Proceeding of *IEEE Engineering in Medicine and Biology Society (EMBS)*, Chicago, IL

S.M.Mavadati, Huanghao Feng, S.Silver, A.Gutierrez and M.Mahoor, 2014. “Children-Robot Interaction: Eye Gaze Analysis of Children with Autism during Social Interactions”, *International Meeting for Autism Research (IMFAR)*, Atlanta, GA

Huanghao Feng, Anibal Gutierrez, Jun Zhang, Mohammad H Mahoor, 2013. “Can NAO robot improve eye-gaze attention of children with high functioning autism?”, *IEEE International Conference on Healthcare Information (ICHI),* pp. 484-484, Philadelphia, PA

**海报与口述报告**

Farzaneh Askari, Huanghao Feng, Mohammad H. Mahoor, Timothy Sweeny and Anibal Gutierrez, 2018. “How children with autism spectrum disorder recognize facial expressions displayed by a rear-projection humanoid robot”, *INSAR 2018 Annual Meeting (formerly IMFAR)*, abstract and poster presentation at Rotterdam, Netherlands

Huanghao Feng, Farzaneh Askari, Mohammad H. Mahoor, 2017. “Socially Assistive Robotics Helps Children with Autism”, DU-EXPO, poster presentation at University of Denver, Denver, CO

S.M.Mavadati, Huanghao Feng, S.Silver, A.Gutierrez and M.Mahoor, 2014. “Children-Robot Interaction: Eye Gaze Analysis of Children with Autism during Social Interactions”, *International Meeting for Autism Research (IMFAR)*, abstract and poster presentation at Atlanta, GA

Huanghao Feng, M.Mahoor, A.Gutierrez, Marry.Kustner and Jun Zhang, 2013. “Using Social Robots at Improving Eye Gaze Attention of Children with Autism Spectrum Disorders”, Proceeding of *International Meeting for Autism Research (IMFAR)*, poster presentation at Donostia, San Sebastian, Basque County, Spain

Huanghao Feng and A.Gutierrez, 2013. “Using Social Robots to Improve Directed Eye Gaze of Children with Autism Spectrum Disorders”, oral presentation at *Texas Autism Research Conference (TARRC)*, San Marcos, TX

**受邀演讲，作品展示及电视广播报道**

March 2018. “Robots becoming social companions thanks to advanced AI, emotional recognition”, CGTN America interview and news report. [See video here](https://america.cgtn.com/2018/03/05/robots-becoming-social-companions-thanks-to-advanced-ai-emotional-recognition)

July 2017. “Robotics STEM Night, Robots in 3D Opening Event”, keynote speaker and demonstration at University of Colorado South Denver

October 2017. “Ryan: The Companion Bot for Elderly with Depression and Dementia Problems”, a live TV interview with Hojjat Abdollahi and Prof. Mohammad Mahoor at 9NEWS TV station. [See video here](https://www.9news.com/article/news/health/a-robot-companion-for-alzheimers-patients/73-484355597)

June 2016. “Robots 3D”, keynote speaker and panel discussion with Michelle Salvador at Denver Museum of Nature and Science

March 2016. “DU Robot Night”, robot demonstration at Denver Museum of Nature and Science

October 2015. “Psych Research Night”, robot demonstration with Prof. Mohammad Mahoor at University of Denver.

September 2015. “How Robots Could Improve Social Skills in Kids with Autism”, Forbes news report. [See report here](https://www.forbes.com/sites/emilymullin/2015/09/25/how-robots-could-improve-social-skills-in-kids-with-autism-disorders/#772d38f2837e)

March 2015. “Robot helps children with autism by teaching them social skills”, FOX31 Denver TV interview with Sophie Silver and Prof. Mohammad Mahoor. [See video here](https://kdvr.com/2015/06/07/robot-helps-children-with-autism-by-teaching-them-social-skills/)

August 2013. “Robot May Help Kids with Autism Become More Sociable”, robot demonstration with Prof. Mohammad Mahoor at Colorado Public Radio Station

**工作经历**

**科研经验** (博士研究生导师: Prof.Mohammad.Mahoor)

2019 至今 | 设计一款可编程的电子钟琴（马林巴，我称其为X-elophone）。此乐器可被任意改写琴键音调和音色可供不同音乐基础的用户使用。

2017 至今 | 为自闭症儿童设计一个基于音乐疗法的全自动音乐机器人教学娱乐平台，用于提高自闭症儿童的社交能力，例如听说轮换，情感理解，肌肉控制等。使用OpenCV进行机器人视觉处理；使用逆运动学理论控制机器人敲击琴键；使用快速傅里叶变化和短时傅里叶变化进行实时音频识别进行人机交互；使用莱文斯坦距离设计实时音乐评分系统。

2017 – 2018 | 开发了一个基于皮肤电导信号（EDA）的自动情绪识别方法。此方法使用了 复Morlet（C-Morlet）小波，对记录的EDA信号进行连续小波变换。并使用SVM分类器进行基于事件活动的情绪分类。

2017 – 2018 | 协助参与设计了为比较自闭症与正常儿童的人脸识别的先行实验。此实验用了一款名叫Ryan的投影人脸机器人。

2015 至今 | 与丹佛大学心理学院合作，参与设计了了人形机器人Zeno的编程，并且主要负责实验执行人员，此实验旨在发现受试者对于机器人眼神与头部位置的方向敏感认知。

2012 – 2014 | 使用NAO机器人对自闭症儿童进行治疗实验，主要提高的社交技能是眼神的交流。通过使用隐马可夫模型对眼神变化的规律进行分析归类，并且可通过此分类器达到通过眼神图形规律来预判受试者是否有概率患有自闭症。

2011 | 在机器人NAO上实现了一个人脸表情识别的算法。此方法用C#和OpenCV实现，表情包括有高兴，悲伤，惊讶和愤怒四种基础表情。 识别率可达80%。

**教学经验**

2019 – Present | Adjunct Lecturer | University of Denver | Denver, CO

Introduction to VLSI Circuits and System

2015 – Present | Teaching Assistant | University of Denver | Denver, CO

Support learning activities in multiple courses crossing Electrical, Computer, Mechanical fields. Help students troubleshooting during labs. Provide great assistive help section during office hours. Instead of providing solution, using design thinking method to inspire students solving problems. Excellent reputation among students and professors.

Available courses:

* Matlab Programming
* Intro to Mechatronics System
* Intro to Mechanical Engineering
* Circuits
* Digital Design
* Engineering, Science and Design
* Embedded System Programming

2014 – 2015 | Instructor and Technology Consultant | Innovation Center at SVVSD | Longmont, CO

Designed and implemented design thinking style curriculums for wide age groups using innovative teaching material in STEM teaching subjects. Provided solid technical support for multiple robotics projects. Trained and leaded students for multiple robotics competitions, and also managed/hosted region wise robotics competitions such as Vex, VexIQ, LEGO, FIRST and BEST. Assisted and hosted international visitors from Japan for STEM education communication. Presented on local TV channel’s STEM night event and Discovery Channel.

**技术经验**

2010 – 2011 | Software Developer | Suzhou University of Science and Technology | Suzhou, Jiangsu, China

* Developed a mobile application using Java in Android operation system.
* XML is used for user interface configuration.
* Assisted to develop an accessible database using mySQL.
* The design won an Excellence Award in Senior Design.

2010 | IT Support Internship | China Telecom Suzhou Branch | Suzhou, Jiangsu, China

Worked as technical support with a summer internship, help trouble shooting with clients.

**荣誉与奖励**

2018-2019 Electrical and Computer Engineering Department Chair’s Award

2018-2019 Academic Year Teaching/Research Assistant Scholarship

2017-2018 Academic Year Teaching/Research Assistant Scholarship

2017 Best Instructor and Consultant at Innovation Center

2016-2017 Academic Year Teaching/Research Assistant Scholarship

2016 RSJ/KROS Distinguished Interdisciplinary Research Award

2015-2016 Academic Year Teaching Assistant Scholarship

2014 Boulder Badminton Tournament Men’s Single Group A (Professional) Bronze

2013-2014 Academic Year Research Assistant Scholarship

2012-2013 Academic Year Research Assistant Scholarship

2011 Senior Design, Excellent Award

2010 Excellent Student Leadership Award

2010 First Tier Scholarship

2009 Excellence team award, Jiangsu College Students Street Dancing Competition (Popping)

2008 Third Tier Scholarship

2007 Talent Star at College May Festival

**ACADEMIC AND PROFESSIONAL SERVICE**

Reviewer, Expert Systems with Applications 2018 – present

Reviewer, International Conference on Robotics and Automation (ICRA) 2018 – present

Reviewer, Journal of Intelligent & Robotic Systems 2016 – present

Tour Guide for Social Robots and Computer Vision Lab 2015 - present

**其他技能与艺术表演**

2015 至今 | 丹佛大学机器人足球俱乐部 – 副主席

2012 – 2016 | 丹佛大学羽毛球俱乐部 – 创始人, 主席

2011 – 2012 | Late Night @ DU “不插电”, 特邀嘉宾, 指弹吉他独奏

2007 – 2011 | 吉他社 – 乐队队长，才艺之星

2008 – 2010 | 学生会 – 文艺部部长

2007 – 2011 | 舞台节目策划， 乐队节奏吉他

**REFERENCES**

* Prof. Mohammad H. Mahoor  
  Professor, Dept. of Electrical and Computer Engineering, University of Denver  
  303-871-3745  
  [mmahoor@du.edu](mailto:mmahoor@du.edu)
* Prof. Kimon P. Valavanis  
  Professor, Dept. of Electrical and Computer Engineering, University of Denver  
  303-871-2586  
  [kvalavan@cs.du.edu](mailto:kvalavan@cs.du.edu)
* Prof. Amin Khodaei

Assoc. Professor, Chair of Dept. of Electrical and Computer Engineering, University of Denver

303-871-2481

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* Prof. Timothy D. Sweeny

Assist. Professor, Dept. of Psychology, University of Denver

303-871-2191

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* Prof. Anibal Gutierrez

Assoc. Professor, Assistant Director, Center of Autism and Related Disabilities, University of Miami

305-284-3324

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* Axel Reitzig

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* Patty Quinones

Assistant Superintendent, Innovation Center, St. Vrain Valley School District

[quinones\_patricia@svvsd.org](mailto:quinones_patricia@svvsd.org)

* Jeffrey Lund

Founder, The TAJL Group

Instruction Program Consultant, Innovation Center, ST. Vrain Valley School District

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