



Under the principle of "Talent First", AIR is committed to building a global top talent highland and innovative talent cultivation base in the field of artificial intelligence, and has attracted many renowned scientists from home and abroad to join AIR, accumulated more than 20 scholars with important academic honors such as American/European Academician, ACM/IEEE Fellow and National Outstanding Youth. AIR is gradually forming a Four-in-One scientific research and industrial team of top international scientists, industrial renovation leaders, academic potential backbone and multidisciplinary integration talents.



Dean Zhang Ya-Qin was elected as a foreign member of Chinese Academy of Engineering in recognition of his distinguished contribution to computer science and to the promotion of China-America exchanges and cooperation.



Professor Zhao Feng, the chief scientist of AIR, was elected as a member of the International Eurasian Academy of Sciences. Professor Zhao is one of the founders in the field of IoT and wireless sensor networks. He has made fundamental contributions to the basic research and core technology development of IoT, and has had a significant impact on the large-scale industrial application of IoT.



Associate Professor Zhou Guyue was selected as one of the "Innovators Under 35 Asia Pacific" in *MIT Technology Review* 2021. Associate Professor Zhou is known as the "strongest brain" behind the world-renowned consumer drones and has made significant technical contributions to the miniaturization of airborne intelligent systems.

In the second half of 2021, AIR introduced six new young scientists:



Zhan Xianyuan Assistant Professor

PhD from Purdue University, former data scientist at JD Technology and associate researcher at Microsoft Research Asia. His research and development project at JD Technology was selected as one of the "Top 30 Best AI Application Cases of Artificial Intelligence 2019" by Machine Heart.



Ma Weizhi Assistant Professor

PhD from Tsinghua University, selected for the "Shuimu Scholars" program of Tsinghua University, awarded the first prize of Qian Weichang Chinese Information Processing Science and Technology Award, and nominated for the best paper of SIGIR.



Li Yuanchun Assistant Professor

PhD from Peking University, former supervising researcher at Microsoft Asia Research Institute, awarded the UbiComp Best Paper Nomination Award and ISEUD Best Paper Award.



Wang Yan Assistant Professor

PhD from Tsinghua University, former senior researcher at SenseTime, founded and responsible for SenseTime codec team, established a leading AI codec technology development and productization system.



Huang Wenbing Assistant Professor

PhD from Tsinghua University, former senior researcher in the AI Lab of Tencent, selected for the "Shuimu Scholars" program of Tsinghua University, and won the championship of IROS, the top international robotics conference, and the Tencent Hornbill Special Research Excellence Award.



Gong Jiangtao Assistant Professor

Ph.D. from Tsinghua University, former senior researcher from Technology Strategy and Innovation Platform of Lenovo Research. The Project HoloBoard she was responsible for has been shortlisted for the Wharton- QS Reimagine Education Awards, which is called "Oscar of Education".



In the fall semester of 2021

In the fall semester of 2021, 6 PhD students and 2 post-docs have been enrolled in AIR. To further support the development of outstanding young talents, AIR has also established the Name Professor and Young Scholars Fund Program, aiming at innovating talent cultivation and incentive mechanism to help outstanding talents grow.

Research Teams



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Facing the frontier of world science and technology, the main battlefield of economy, the major needs of the country, and people's life and health, AIR keeps using artificial intelligence technology to empower industrial upgrading and promote social progress. Five research teams were established:



Under the umbrella of Apollo Air project, AIR advocates vehicleinfrastructure collaborative autonomous driving and has developed a platform that integrates key technologies such as holographic perception, high precision positioning and autonomous decisionmaking. The new platform explores the integration of "Human-Vehicle-Road-Cloud" perception, and promotes the scaling and commercialization of L4/L5 autonomous driving.



Propose *AIR Ground-Breaking Plan*, define core frontier tasks, build AI infrastructure, data platform and core algorithm engine for life sciences; build theoretical and technical ecology; break the barriers between AI and life sciences, and accelerate major scientific discoveries.



Propose AIR Green-Computing Initiative, focusing on smart cities, smart parks, smart manufacturing, industrial Internet, and other application scenarios; leveraging 5G, IoT, edge computing and other key technologies to build high-efficiency AI systems; using AI to improve quality, increase efficiency, save energy, and reduce emissions; and helping achieve "carbon neutrality".



BDI Lab aims to solve the following challenges faced by big data applications: the heterogeneity of multimodal data; the lack of high quality ML-Ready data; data privacy and isolated data islands. DAIR, our Big Data and AutoML platform, is developed to generate high quality ML-Ready data with a human-in-the-loop AI approach, to improve the precision of the AI tasks with multimodal machine learning, and to unlock the data value without sacrificing privacy and security with federated machine learning.



Establish DISCOVER Platform with perception, planning, control and decision making as core technology for various application scenarios, including Vehicle-to-Infrastructure (V2I), Customer-to-Manufacturer (C2M), and Automation for Research and Development (AutoRD). The platform will provide key technical support for AI+Transportation, AI+Healthcare and AI+IoT.



Research Achievements



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车路智行 引领自动驾驶安全新高度

暨《面向自动驾驶的车路协同关键技术与展望》白皮书联合发布会



In June 2021, AIR and Baidu jointly released the white paper on "Vehicle-Infrastructure Cooperated Autonomous Driving Key Technologies and Developing Prospect", which is the world's first white paper on vehicle-road collaboration technology innovation.

In July 2021, Professor Liu Yunxin's paper "*nn-Meter: Accurately Predicting the Inference Latency of Deep Learning Models on Edge Devices*" won the MobiSys 2021 Best Paper Award. AIR and AsiaInfo participated in the "2021 China RPA+AI Developer Competition" with the project "5G Wise Eye Quality Inspection Robot" and won the National Champion and Grand Prize at the university level.

In August 2021, the "5G network intelligent system research and development and industrial scale application" jointly completed by AIR and AsiaInfo passed the scientific and technological achievement appraisal organized by China Artificial Intelligence Society, and it was praised as "international advanced and domestic leading". The GeneBERT team under the guidance of Professor Lan Yanyan won the overall champion of DeeCamp 2021, and the world's first AI customized building block product "Fangzai Photo Studio" jointly launched by AIR and Qimeng won the first prize in the Tencent Mini Program Competition.

In September 2021, the world's first Dataset for Vehicle-Infrastructure Collaborative Autonomous Driving: DAIR-V2X dataset was officially released. The dataset was collected from Beijing High-Level Autonomous Driving Demonstration Area.

In November 2021, Helixon, AIR and School of Medicine, Tsinghua University jointly made a breakthrough in the design and optimization of Covid-19 antibodies using a novel artificial intelligence antibody platform, which greatly improved the antiviral ability of existing antibodies and created a brand new path and paradigm for the development of new-generation antibody drugs.

Industrial Collaboration

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In July 2021, AIR and China Resources Life Sciences Group Co., Ltd. established the joint research center of "Artificial Intelligence and Life Sciences". The two parties will work together to make use of their respective strengths to cooperate in the intersection of artificial intelligence and Life Sciences for advanced research and application deployment to provide sustainable support for the development of Life Sciences industry.

2021.08 🔶

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2021.1



In August 2021, AIR and Beijing Acaedemy of Artificial Intelligence established the Joint Research Center of "Health Computing". The center is dedicated to promoting the development of various health fields from isolated and open-loop to collaborative and closed-loop through artificial intelligence technology. It will promote passive health management to a new paradigm of early prediction, active prevention, personalization and active participation, and achieve smarter personal health management and more effective public health governance.

In September 2021, AIR established cooperation with TCM Brain, an artificial intelligence Chinese medicine company.

In October 2021, the "Automatic Driving Simulation Platform" project was approved by the Ministry of Industry and Information Technology. The project was joitly-applied by AIR and Baidu.

In November, 2021, AIR established cooperation with health management company Health Mind.

Partners S万国数据 **HAOMO.AI** WØRLD ECONOMIC apollo Baidb百度 FORUM 北京智源 创新工场 BioMap 百图生科 3ΛΛΙ 202 年間 地 平 线 4Paradigm Horizon Robotics











Health Mind

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O5 Academic Services



AIR faculty members actively participate in important domestic and international events in the intelligence industry. in September 2021, Dean Zhang Ya-Qin attended the World Internet Conference and delivered a speech to discuss the opportunities and challenges facing AI from two aspects: green computing and health computing. In green computing, he believes that AI-enabled green computing is promising, and the implementation of industrial applications will help China achieve the 2060 carbon neutral goal. AIR will focus on energy-efficient AI computing systems and the use of AI to improve quality and increase energy efficiency and reduce emissions. In terms of health computing, Dean Zhang Ya-Qin said that AIR focuses on "AI-enhanced personal health management and public health", "AI+medical and life science", "AI-assisted drug disign & discovery" and "AI+genetic research and development". AIR will work with academia and industry to promote the development of life science, biomedicine, genetic engineering and personal health from isolation and open-loop to collaboration and closed-loop.

AIR regularly organizes a variety of academic activities to enhance academic exchanges, promote discipline development, and cultivate young talents.

Dialogue with Greatminds:

In June 2021, Professor John Hopcroft, Turing Award Laureate and member of the Academic Advisory Board of AIR, visited AIR and had an in-depth dialogue with students and faculties on talent cultivation and academic research.



Academic Salons:

In the fall semester of 2021, AIR held 8 academic salons and invited many famous scholars from academia and industry, including Professor Yang Qiang, Chair Professor of Hong Kong University of Science and Technology, Academician Tao Dacheng, President of JD Exploration Research Institute, and Professor Li Shengbo, Deputy Dean of School of Vehicle and Mobility, Tsinghua University, to give academic presentations, reaching over 70,000 audiences.

Summer Camp:

In July 2021, AIR held the first Summer AIR Summer Camp, which focused on four major themes: artificial intelligence, robotics, machine learning and big data. Participating undergraduate students were free to choose a cross-cutting area to conduct intense research and practice, with each topic being guided by influential scientists in the field.

DISCOVER Lab Open Day:

In October 2021, DISCOVER Lab held an Open Day event, provided participants with a closer view of various cutting-edge equipment such as robotic dogs, robotic arms, RoboMaster robots, etc., and interacted with industry experts, teachers and students.







Intern Party was celebrated in a warm atmosphere. Students accumulated rich learning and practice experience in a relaxed and inclusive environment.





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 At the Mid-Autumn Festival, all AIRers gather together to share moon cakes and enjoy reunion in the warm

AIR family.

AIR Team Building in Miyun: barbecue, games... Everyone is relaxed and embracing nature.



The first birthday of AIR was warmly celebrated on 1 December in Turing Lecture Hall, where the development and work of AIR in the past year were reviewed, and the future of AIR was looked forward to. The party also featured with talent shows, games and lucky draws.







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