

CURRICULUM VITAE



PERSONAL INFORMATION

Family name, given name Chen, Jia
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CURRENT POSITIONS

05/2015 – now **Professor for Environmental Sensing and Modelling and head of the group.**
Member of Departments: Electrical Engineering and Information Technology, as well as
Civil, Geo and Environmental Engineering, **Technical University of Munich (TUM)**
05/2015 – now **Associate**, Department of Earth and Planetary Sciences, **Harvard University**, USA

PREVIOUS POSITIONS

2015 – 2021 **Fellow**, Institute for Advanced Study (IAS), TUM
2011 – 2015 **Postdoctoral Fellow / Research Associate**, School of Engineering and Applied Sciences,
Environmental Science & Engineering, Wofsy-Munger Greenhouse Gases and Bio-
sphere Atmosphere Exchange Group, **Harvard University**, USA
2006 – 2011 **Doctoral Candidate**, TUM Department of Electrical Engineering and Information Tech-
nology in collaboration with Siemens Corporate Technology, Germany

EDUCATION

2011 **Dr.-Ing.** (Doctorate in Engineering), Electrical Engineering and Information
Technology, **TUM**, Germany
Dissertation: “Compact Laser-Spectroscopic Gas Sensors using Vertical-Cavity Surface-
Emitting Lasers”, Grade: summa cum laude (with highest distinction)
2006 **Dipl.-Ing.**, Electrical Engineering and Information Technology, **Karlsruhe Institute of
Technology (KIT)**, Germany
Thesis: “Analyse von CDMA-Verfahren für PLC auf zukünftigen Bordnetzen im Kraft-
fahrzeug” (Grade: 1.0, best grade)

PUBLICATIONS

since 2007 2 Books and 2 book chapters, 12 patents, one WMO guideline
72 peer-reviewed journal publications
151 conference contributions
Full list of publications and patents: see <https://go.tum.de/072266>
h-index: 25, i10-index: 57 (Google Scholar, 05/2023)
ORCID <https://orcid.org/0000-0002-6350-6610>
ResearchGate <https://www.researchgate.net/profile/Jia-Chen-65>

SELECTED AWARDS AND RECOGNITIONS

01/2023	ERC Consolidator Grant
12/2021	Arnold Sommerfeld-Award , Bavarian Academy of Sciences and Humanities
02/2021	Member of the Global Young Academy (GYA)
11/2020	Young Elite: Top 40 Under 40 , Capital Magazine
05/2015	Rudolf Mößbauer Fellowship, TUM Institute for Advanced Study
12/2014	Postdoctoral Award for Professional Development, Harvard University
06/2013	Winning the Harvard internal competition for the National Science Foundation Major Research Instrumentation Program (with Prof. Steven C. Wofsy)
11/2012	VDE ITG-Dissertationspreis (3 award winners nationwide, for the best dissertation in the field of information technology)
10/2011	Rohde & Schwarz-Preis , Technical University of Munich (best PhD dissertation, Department of Electrical and Computer Engineering)
05/2010	IEEE Photonics Society Students Travel Grant Award
07/2009	Best Poster Award (first place) at the international conference EUROSENSORS
05/2009	Kaiser-Friedrich-Forschungspreis (for pioneering technical and scientific research results)
05/2009	Nomination for the international AMA SENSOR Innovation Award (Top 3)
05/2009	Incubic/Milton Chang Travel Grant Award
11/2008	IEEE Lasers & Electro-Optics Society Graduate Student Fellowship (12 award winners worldwide, for outstanding graduates of the IEEE Society)
03/2007	Ernst-von-Siemens-Promotionsstipendium
10/1999	2nd prize in the Chinese National Mathematics Olympiad Competition

THIRD-PARTY FUNDING

2022 – 2025	EU Horizon 2020 (101037319): PAUL (Pilot application in urban landscapes towards integrated city observatories for greenhouse gases) Role: Science lead for Munich, task lead for ground-based remote sensing
2021 – 2024	NASA: OCO validation and flux inversion using ground-based FTIR data from MUCNet Role: PI (1 PI)
2021 – 2024	Vienna Science and Technology Fund (ESR20-030): Vienna Urban Carbon Laboratory Role: Co-PI (PI: Bradley Matthews, BOKU)
2020 – 2022	Bavarian State Ministry of the Environment (TLK 01U-75487): Fine-meshed NO ₂ sensor network in Munich Role: PI (1 PI)
2020 – 2021	BaCaTeC (Nr. 14 [2019-2]): Real-time Urban Emission Maps for Greenhouse Gases Based on Concentration Measurements Role: PI (2 PIs, together with Ron Cohen, UC Berkeley)
2020 – 2021	United Nations Environment Programme: German Methane Emission Assessment in Urban Regions (German MEASURE) Role: PI (1 PI)

- 2019 – 2021 **German Research Foundation** (Nr. 419317138): [Mesoscale Network for Monitoring Greenhouse Gas and Pollutant Emissions](#)
Role: PI (1 PI)
- 2019 **German Research Foundation** (Nr. 422614568): [Differential Column System](#)
Role: PI (1 PI)
- 2017 **US Environmental Defense Fund**: Investigating greenhouse gas emissions in Munich
Role: Co-PI (PI: Steven Wofsy, Harvard University)
- 2017 – 2018 **Zhejiang University**: Measurement and Simulation of Multi-Scale Carbon Emission
Role: PI (2 PIs, together with Wu Xuecheng, Zhejiang University)
- 2016 – 2019 **Audi Research Fund**: Modellbasierte Optimierung mikroelektronischer Time-of-Flight Sensorarchitekturen
Role: PI (1 PI)
- 2016 – 2019 **NASA Carbon Monitoring System**: [Prototype regional carbon monitoring systems for urban regions](#)
Role: collaborator (PI: Thomas Nehrkorn, AER)
- 2016 **Transatlantic Climate Bridge**: Investigating the greenhouse gas emissions in the San Francisco Bay area
Role: PI (1 PI)
- 2016 **US Environmental Defense Fund**: Investigating greenhouse gas emissions in Indianapolis and San Francisco Bay area, USA
Role: Co-PI (PI: Steven Wofsy, Harvard University)
- 2015 – 2018 **NASA**: [Validation and Application of OCO-2 Data in the Northeastern United States](#)
Role: Co-PI (PI: Steven Wofsy, Harvard University)
- 2013 – 2016 **National Science Foundation** (Award #1337512): MRI: Acquisition of Mesoscale Network of Surface Sensors and Solar-tracking Spectrometers
Role: Co-PI (PI: Steven Wofsy, Harvard University)

SELECTED MEDIA COVERAGE

Newspapers and magazines: featured more than **100 times**, e.g. in [Physics Today](#), [die Zeit](#), [ZEIT WISSEN](#), [The Guardian](#), [American Geophysical Union's Eos Magazine](#), [Süddeutsche Zeitung](#), [die Welt](#), [ZDFheute](#), [der Standard](#), [Münchner Merkur](#), [VDI Nachrichten](#), [ORF](#), [Smithsonian Magazine](#), [der Focus](#), [Stern](#) etc.

Fernsehen: [ARD W wie Wissen](#), [BR Gut zu wissen](#), [BR Abendschau](#), [BR Rundschau](#), [SAT.1](#), [Galileo](#), [VDE YouTube Channel](#)

Radio: [Deutschlandfunk](#), [Rundfunk Berlin-Brandenburg](#), [Bayerischer Rundfunk](#), [ORF](#)

SUPERVISION OF STUDENTS AND POSTDOCTORAL FELLOWS

2015 – now 8 postdocs (3 became professors), 16 PhD students (1 external, 3 co-supervision), 54 master students, 22 bachelor students, and 20 internships. My postdocs and students have received 1 RK Memorial Gold Medal for Young Geospatial Scientist, 1 TUM University Foundation Fellowship, 1 Google Travel Grant Award, 1 Germany Scholarship, 7 DAAD Scholarships, 8 CSC Scholarships, and 1 Marie Skłodowska-Curie fellowship

TEACHING ACTIVITIES

2021 – now Lecture: Advanced Topics in Electronic Sensors – Principles and Applications*, TUM

JIA CHEN – CURRICULUM VITAE

2019 – now	Lecturer: Lab Course Innovative Atmospheric Sensing Devices* , TUM
2016 – now	Lecturer: Electromagnetic Sensors and Measurement Systems* , TUM
Winter 2016	Guest lecturer: Atmospheric Physics and Remote Sensing, TUM
2015 – now	Lecturer: Advanced Seminar Environmental Sensing* , TUM
2015 – now	Lecturer: Environmental Sensing and Modeling* , TUM
Spring 2014	Guest lecturer: Earth & Planetary Sciences 238: Spectroscopy and Radiative Transfer of Planetary Atmospheres , Harvard University
2012 – 2013	Teaching assistant: Earth & Planetary Sciences 236: Environmental Modeling and Data Analysis , Harvard University
2011	Tutor: Fabrication and Characterization of Laser Diodes, TUM

ACADEMIC ENGAGEMENT

2022	Co-chair and co-convener of EGU Session “ Anthropogenic methane emissions: bridging anthropogenic emissions and mitigation internationally ”
Since 2021	Leader of innovation sector “Environment” in Munich Institute of Robotics and Machine Intelligence
Since 2021	Lead for Global Young Academy working group “ Citizen Science for the 2030 SDG Agenda ”
2020	Section lead in World Meteorological Organization workshop “ Towards an International Standard for Urban GHG Monitoring and Assessment ”
2019, 2021	Partner of Science Hack . Topic: “Big data analysis for visualizing GHG emissions”. Second Winner in 2021.
2019	Co-convener of EGU Session “ Anthropogenic methane emissions: Linking atmospheric observations with mitigation ”
2015 – 2019	Organized and co-organized 6 measurement campaigns with international and national partners including Harvard, UC Berkeley, Caltech, Utrecht University, DLR, LMU, and KIT
2016	Organizer and panelist of panel discussion in the San Francisco German Consulate: Climate Change Mitigation: Greenhouse Gas Emissions in the Bay Area
2016	Visiting Scholar at the University of California, Berkeley
2016	Host of TUM August-Wilhelm Scheer Visiting Professor Steven Wofsy, Harvard
2013 – 2014	Organizer of Harvard SEAS Professional Development Seminar
since 2009	Frequent reviewer for Atmospheric Measurement Techniques, Atmospheric Chemistry and Physics, Journal of Geophysical Research – Atmospheres, Earth and Space Science, Remote Sensing of Environment, Atmospheric Environment, Environmental Research Letters, Sensors, International Journal of Multi-phase Flow, Applied Physics Letters, Applied Physics B: Lasers and Optics, Advances in Meteorology etc.

MEMBERSHIPS

Global Young Academy, IEEE Photonics Society, VDE (Verband der Elektrotechnik, Elektronik und Informationstechnik), VDI (Verein Deutscher Ingenieure), AGU (Ameri-

* newly conceptualized

can Geophysical Union), EGU (European Geosciences Union), COCCON (Collaborative Carbon Column Observing Network), ICOS (Integrated Carbon Observation System), NASA Satellites OCO (Orbiting Carbon Observatory) Science Team

SELECTED KEYNOTE AND INVITED TALKS

- 04/2023 [Novel Sensor Networks and Methods for Urban Greenhouse Gas Monitoring](#), **EGU General Assembly 2023**, Vienna, Austria.
- 06/2022 [Novel approaches to identify and quantify urban sources and sinks of greenhouse gases](#), 25 year anniversary symposium, **Max Planck Institute** for Biogeochemistry, Jena, Germany
- 05/2022 [Sensing and Modeling of Greenhouse Gases and Air Pollutants in Urban Environments](#), International Conference Society and Sustainability, Bucharest, Romania.
- 04/2022 [Novel methods for quantifying greenhouse gases and air pollutants in cities](#), **Leibniz Institute** for Agricultural Engineering and Bioeconomy
- 03/2022 [Greenhouse Gases and Air Pollutants in the Urban Environment: Uncovering the Unknown](#), Department of Earth and Planetary Sciences Colloquium, **Harvard University**
- 07/2021 [FTS Open Path Measurements Around Munich](#), OSA Optical Sensors and Sensing Congress
- 12/2020 [“Stories about the Munich Urban greenhouse gas Column network \(MUCnet\) and the Oktoberfest”](#), Atmospheric & Environmental Chemistry Seminar, **Harvard University**
- 06/2020 [“Ground-based Remote Sensing”](#), Towards an International Standard for Urban GHG Monitoring and assessment, workshop organized by **World Meteorological Organization** IG3IS.
- 11/2018 [“Greenhouse Gas Monitoring in Munich and Development of CO₂ and NO_x Sensors”](#), **German-Sino Symposium** “Development of New Monitoring Strategies for the Investigation of Acute Air Pollution and Bioaerosol Episodes and Reducing Their Impacts on Human Health”, Chengdu, China
- 08/2018 [“Differential Column Network for Monitoring Urban Greenhouse Gas and Pollutant Emissions”](#), **Leibniz Institute** for Tropospheric Research (TROPOS), Leipzig, Germany
- 06/2018 [“Here comes the sun: A new carbon detective story”](#), Symposium Celebration of Science and Times for Steven C. Wofsy, **Harvard University**, Cambridge, USA
- 11/2016 [“Atmospheric Measurements for Urban Emission Estimates of Greenhouse Gases”](#), **UC Berkeley**, California, USA
- 02/2015 [“Compact Ground-based Solar-tracking Spectrometers for Column Gradient Measurements”](#), Atomic and Molecular Physics Division (AMP) seminar, **Harvard-Smithsonian** Center for Astrophysics, Cambridge, USA
- 06/2014 [“Boston Column Network: Solar-Tracking Spectrometers for Urban Air Quality”](#), **IEEE International Conference on Universal Village**, **Massachusetts Institute of Technology (MIT)**, USA
- 04/2014 [“Boston Column Network: Compact Solar-Tracking Spectrometer and Eulerian Modelling”](#), **Colloquia**, **Max-Planck-Institute** for Biogeochemistry, Jena, Germany
- 10/2013 [“Mobilität der Zukunft – ein internationaler Diskurs”](#), **VDE MINT Symposium** Mobilität der Zukunft, Munich, Germany
- 11/2012 [“Compact Gas Sensors for Household, Industrial and Environmental Applications”](#), **University of Potsdam**, Potsdam, Germany
- 05/2008 [“Overview on Siemens CT Research Activities in Laser Based Gas Sensing”](#), **Princeton University**, Princeton, USA