

Dr. Yizhen Huang

Research Scientist and Instructor in Educational Psychology

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Current Research Interests

- 1: Application of virtual reality simulations for promoting instructional quality and educational success
- 2: Experimental investigations of teachers' cognition and emotion in physical and virtual reality through multimodal data
- 3: Machine learning enabled adaptive feedback for instructional process
- 4: Antecedents and outcomes of teachers' professional vision

Scientific Career

Akademische Mitarbeiterin [Postdoctoral Research Scientist and Instructor]

Kiel, Germany

Department of Research on Teaching and Teacher Education, Kiel University

2019–Present

- Lead Professor: Thilo Kleickmann

Akademische Mitarbeiterin [Postdoctoral Research Scientist and Instructor]

Potsdam, Germany

Educational Research in Educational Sciences, Department of Education, University of Potsdam

2018–Present

- Lead Professor: Dirk Richter

Education

University of Michigan, Ann Arbor, MI, United States

Ph.D. in Education and Psychology

2016–2018

- Graduate Date: August 17, 2018
- Combined Program in Education and Psychology
- Dissertation Title: Learning from teacher's eye movement: Expertise, subject matter and video modeling
- Doctoral Committee: Kevin F. Miller (chair), Kai S. Cortina, Richard D. Gonzalez, Priti R. Shah

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M.A. in Statistics

2016–2018

- Graduate Date: August 17, 2018
- Dual Master's Program in Statistics

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M.S. in Psychology

2013–2016

- Graduate Date: December 22, 2016
- Combined Program in Education and Psychology
- Thesis Title: Looking through you: First-person perspective video affects preschoolers' sex-typed toy choices

Beijing Normal University, Beijing, China

B.S. in Psychology

2009–2013

- Graduate Date: July 01, 2013
- School of Psychology
- Thesis Title: The influence of categorical information and attribute information on preschool children's toy choice

Funded Research Projects

DigiProMIN [Competence Center for Digitization-Related and Digitally Supported Professional Development of STEM Teachers] (€228,105.00 for my position)

*Multisites including University of
Potsdam*

BMBF [Federal Ministry of Education and Research]

2023-2025

- BMBF Kompetenzzentren für digitales und digital gestütztes Unterrichten in Schule und Weiterbildung [Competence Centers for Digital and Digitally Supported Teaching in Schools and Further Education]
- Project Manager. PIs: Katharina Scheiter, Dirk Richter, Thilo Kleickmann, Mirjam Steffensky

Compare Interactive Simulation and 360 Video in Virtual Reality for Teacher Professional Learning (€3,850)

*Kent, OH, United States and
Potsdam, Germany
2022*

University of Potsdam

- KoUP [Cooperation Funding at the University of Potsdam]
- Co-Principal Investigator. Co-PIs: Karl W. Kosko

Virtual Reality in Teacher Education

*Potsdam, Germany
2019–Present*

Educational Research in the Educational Sciences, University of Potsdam

- Internal Funding
- Co-Principal Investigator. Co-PIs: Dirk Richter, Thilo Kleickmann, Eric Richter

Understand Teacher's Professional Development Choices in Brandenburg

Potsdam, Germany

Educational Research in the Educational Sciences, University of Potsdam

2018–2019

- Internal Funding
- Co-Principal Investigator. Co-PIs: Eric Richter, Dirk Richter

Look through You: How First-person Perspective Video Promotes Perceptual Problem Solving? (\$3,000)

Ann Arbor, MI, United States

Rackham Graduate School, University of Michigan

2017–2018

- Rackham Graduate Student Research Grant
- Principal Investigator. Co-PIs: Kevin F. Miller, Kai S. Cortina

Effects of Modeling that Convey Moral Standards on Delay of Gratification among Chinese and US Preschoolers (\$5,000)

Ann Arbor, MI, United States

The International Institute, University of Michigan

2016

- International Institute Individual Fellowships
- Principal Investigator. Co-PIs: Kevin F. Miller, Kai S. Cortina

The Influence of First-person Perspective Video on Early Childhood Sex-typed Toy Choices (\$4,000)

Ann Arbor, MI, United States

School of Education, University of Michigan

2014

- Professor & Mrs. Cho-Yee To Fund
- Principal Investigator. Co-PIs: Kevin F. Miller, Kai S. Cortina

Research Stay

Aggarwal-Blackburn Visiting Scholar

Kent, OH, United States

Extended Reality Initiative (XRi), School of Teaching, Learning and Curriculum Studies,
Kent State University

Sep 2022

- Lead Professor: Karl W. Kosko

Awards, Scholarships, Further Competitive Grants

AERA TACTL Best Paper Award Nomination

Chicago, United States

American Educational Research Association (AERA) Technology as an Agent of Change
in Teaching and Learning Special Interest Group (TACTL SIG)

2023

- Nominated as the ten best research papers submitted to TACTL and accepted for presentation at the AERA 2023 Conference.

Kongressreisenprogramm [Congress Travel Program] (€2,259)

Bonn, Germany

DAAD [German Academic Exchange Service]

2022

- Federal-level support for active participation of German scientists in international scientific congresses.

AERA SIG-IT Best Paper Award (\$350)

Virtual

American Educational Research Association (AERA) Instructional Technology Special Interest Group (SIG-IT)

2021

- Selected as the best research paper submitted to SIG-IT and accepted for presentation at the AERA 2021 Conference.

Study Innovation Prize (€100)

Potsdam, Germany

Faculty of Human Sciences, University of Potsdam

2020

- Selected as the top three innovative teaching projects that promote good practice in E-Learning.

Potsdam Travel Grant (€1,480)

Potsdam, Germany

Potsdam Graduate School, University of Potsdam

2019

- Institute-level support for presentations in scientific events.

Rackham Conference Travel Grant (\$800)

Ann Arbor, United States

Rackham Graduate School, University of Michigan

2015

- Institute-level support for graduate students in good academic standings for academic conferences.

Publications

Refereed Journal Articles (7)

Huang, Y., Richter, E., Kleickmann, T., Scheiter, K., & Richter, D. (2023). Body in motion, attention in focus: A virtual reality study on teachers' movement patterns and noticing. *Computers & Education*, 206, 104912. <https://doi.org/10.1016/j.compedu.2023.104912>

Huang, Y., Richter, E., Kleickmann, T., & Richter, D. (2023). Comparing video and virtual reality as tools for fostering interest and self-efficacy in classroom management: Results of a pre-registered experiment. *British Journal of Educational Technology*, 54(2), 467--488. <https://doi.org/10.1111/bjet.13254>

Huang, Y., Miller, K. F., Cortina, K. S., & Richter, D. (2023). Teachers' professional vision in action. *Zeitschrift Für Pädagogische Psychologie [German Journal of Educational Psychology]*, 37(1-2), 122--139. <https://doi.org/10.1024/1010-0652/a000313>

Richter, E., Hußner, I., Huang, Y., Richter, D., & Lazarides, R. (2022). Video-based reflection in teacher education: Comparing virtual reality and real classroom videos. *Computers & Education*, 190, 104601. <https://doi.org/10.1016/j.compedu.2022.104601>

Huang, Y., Richter, E., Kleickmann, T., & Richter, D. (2022). Class size affects preservice teachers' physiological and psychological stress reactions: An experiment in a virtual reality classroom. *Computers & Education*, 184, 104503. <https://doi.org/10.1016/j.compedu.2022.104503>

Huang, Y., Richter, E., Kleickmann, T., Wiepke, A., & Richter, D. (2021). Classroom complexity affects student teachers' behavior in a VR classroom. *Computers & Education*, 163, 104100. <https://doi.org/10.1016/j.compedu.2020.104100>

Richter, E., Marx, A., Huang, Y., & Richter, D. (2020). Zeiten zum beruflichen Lernen: Eine empirische Untersuchung zum Zeitpunkt und der Dauer von Fortbildungsangeboten für Lehrkräfte [Time for professional learning: an empirical study about timing and duration of teacher training]. *Zeitschrift für Erziehungswissenschaft [Journal of Educational Science]*, 23(1), 145--173. <https://doi.org/10.1007/s11618-019-00924-x>

Book Chapters and Reports (2)

Huang, Y., Richter, E., Kleickmann, T., & Richter, D. (2023). Virtual reality in teacher education from 2010 to 2020. In K. Scheiter & I. Gogolin (Eds.), *Bildung für eine digitale Zukunft [Education for a Digital Future]* (pp. 399--441). Springer Fachmedien. https://doi.org/10.1007/978-3-658-37895-0_16

Cortina, K. S., Miller, K. F., Hua, S., Peist, E., Huang, Y., & Wei, Y. (2013). Behavioral regulation of preschoolers in China and the US: the role of attention. In N. McElvany

& H. G. Holtappels (Eds.), *Empirische Bildungsforschung: Theorien, Methoden, Befunde und Perspektiven* [Empirical educational research: theories, methods, findings, and perspectives] (pp. 125--133). Waxmann Verlag. <https://books.google.com?id=rUAdAAAAQBAJ>

Other Publications

- Huang, Y.** (2018). *Learning from teacher's eye movement: Expertise, subject matter and video modeling* [Doctoral dissertation, University of Michigan]. <https://doi.org/2027.42/145853>
- Huang, Y.** (2017). *A discussion on data visualization in 21st century education*. Blog of Center for Academic Innovation at University of Michigan. <https://bit.ly/3klgaHy>
- Huang, Y., Foley, K., & Jankovic, F.** (2017). *A picture is worth a thousand words: Understanding learners through visualization*. Blog of Center for Academic Innovation at University of Michigan. <https://bit.ly/41ghSdR>

Presentations

Refereed Conference Presentations (19)

- Huang, Y., Reuth, G. F., Richter, E., Kleickmann, T., & Richter, D.** (2023, September 13--15). *Preservice teachers' stress reactions and lexical richness during instruction in virtual reality*. In A. Henke (Chair), *a University of Potsdam symposium on emotion and motivation in technology-enhanced learning and instruction* [Symposium]. Arbeitsgruppe für Empirische Pädagogische Forschung (AEPF) 2023 [Conference of the Working Group for Empirical Educational Research 2023], Potsdam, Germany.
- Huang, Y., Richter, E., Geske, A., Weber, K. E., Jacobsen, L. J., & Richter, D.** (2023, September 13--15). *Virtual reality teaching partner: Compare preservice teachers' perceptions of real versus virtual reality teaching simulation*. In Y. Huang (Chair), *In Immersive education: Harnessing extended reality for transformative teaching and learning* [Symposium]. Arbeitsgruppe für Empirische Pädagogische Forschung (AEPF) 2023 [Conference of the Working Group for Empirical Educational Research 2023], Potsdam, Germany.
- Bardach, L., **Huang, Y., Richter, E., Klassen, R. M., Kleickmann, T., & Richter, D.** (2023, August 22--26). *Revisiting effects of teacher characteristics on stress: A virtual reality study*. In R. Klassen (Chair), *Building a better understanding of teachers' well-being* [Symposium]. The European Association for Research on Learning and Instruction (EARLI) 20th Biennial Conference, Thessaloniki, Greece.
- Huang, Y., Richter, E., Kleickmann, T., Richter, D., & Scheiter, K.** (2023, August 22--26). *Uncover teachers' movement patterns in immersive VR: Relevance for visual attention performance*. In V. Hoogerheide (Chair), *A multi-disciplinary perspective on immersive virtual reality learning and instruction* [Symposium]. The European Association for Research on Learning and Instruction (EARLI) 20th Biennial Conference, Thessaloniki, Greece.
- Huang, Y., Richter, E., Kleickmann, T., & Richter, D.** (2023, February 28--March 2). *Comparing video and virtual reality as tools for fostering interest and self-efficacy in classroom management: Results of a pre-registered experiment*. In R. Junker (Chair), *Evaluation digitaler Lernumgebungen zur Förderung der Klassenführungskompetenz bei Lehramtsstudierenden* [Evaluation of digital learning environments to promote classroom management skills in student teachers] [Symposium]. Gesellschaft für Empirische Bildungsforschung [Society for Empirical Educational Research] (GEBF) 2023 Annual Meeting, Essen, NW, Germany.
- Richter, E., Hußner, I., **Huang, Y., Richter, D., & Lazarides, R.** (2023, February 28--March 2). *Videobasierte Unterrichtsreflexion in der Lehrkräfteausbildung: Virtual Reality und klassische Unterrichtsvideos im Vergleich* [Video-based instructional reflection in teacher education: Comparing virtual reality and traditional instructional videos]. In T. Daltoè & R. Göllner (Chairs), *Unterrichtserleben in Virtual Reality als Chance für die Lehrkräftebildung* [Classroom experience in virtual reality as an opportunity for teacher education] [Symposium]. Gesellschaft für Empirische Bildungsforschung [Society for Empirical Educational Research] (GEBF) 2023 Annual Meeting, Essen, NW, Germany.

- Huang, Y.**, Richter, E., Kleickmann, T., Wiepke, A., & Richter, D. (2021, April 8--12). *Classroom complexity affects student teachers' behavior in a VR classroom* [Paper presentation]. American Educational Research Association (AERA) 2021 Annual Meeting, Virtual.
- Huang, Y.**, Richter, E., Kleickmann, T., & Richter, D. (2020, December 10--11). *Virtual reality and teacher education: A literature review for the last decade* [Paper presentation]. ZfE-Forum 2020: Bildung für eine digitale Zukunft [Journal of Educational Science Forum 2020: Education for a Digital Future], Hamburg, Germany.
- Huang, Y.**, Richter, E., & Richter, D. (2020, April 17--21). *Presence and efficacy: Training preservice teachers' classroom management skills in virtual reality* [Paper presentation]. American Educational Research Association (AERA) 2020 Annual Meeting, San Francisco, CA, United States (Conference Canceled). <http://tinyurl.com/vqq6flp>
- Huang, Y.**, Miller, K. F., Cortina, K. S., & Richter, D. (2019, February 25--27). *Learning from teacher's eyes: Expertise and eye movements* [Paper presentation]. Gesellschaft für Empirische Bildungsforschung [Society for Empirical Educational Research] (GEBF) 2019 Annual Meeting, Köln, NW, Germany.
- Richter, D., Wiepke, A., Richter, E., **Huang, Y.**, & Zender, R. (2019, February 25--27). *Nutzung von Virtual Reality-Technologie zur Erfassung von Klassenführungskompetenzen in der Lehrerausbildung* [Using virtual reality technology to assess classroom management skills in teacher education] [Paper presentation]. Gesellschaft für Empirische Bildungsforschung [Society for Empirical Educational Research] (GEBF) 2019 Annual Meeting, Köln, NW, Germany.
- Richter, E., Marx, A., **Huang, Y.**, & Richter, D. (2019, February 25--27). *Zeiten zum Lernen: Eine empirische Analyse zum Zeitpunkt und der Dauer von Fortbildungsveranstaltungen für Lehrkräfte* [Times to learn: An empirical analysis of the timing and duration of professional development events for teachers] [Paper presentation]. Gesellschaft für Empirische Bildungsforschung [Society for Empirical Educational Research] (GEBF) 2019 Annual Meeting, Köln, NW, Germany.
- Park, I., **Huang, Y.**, & Sun, X. (2018, April 13--17). *Effects of first impressions and instructional quality on student engagement: A continuous evaluation* [Symposium]. American Educational Research Association (AERA) 2018 Annual Meeting, New York, NY, United States.
- Huang, Y.**, Miller, K. F., Cortina, K. S., & Su, L. (2017, April 6--8). *Effects of modeling on delay of gratification among Chinese preschoolers: Testing a new method for assessing self-control* [Poster presentation]. Society for Research in Child Development (SRCD) 2017 Biennial Meeting, Austin, TX, United States.
- Huang, Y.**, Su, L., & Miller, K. F. (2015, March 19--21). *Looking through you: First-person perspective video affects Chinese preschoolers' sex-typed toy choices* [Poster presentation]. Society for Research in Child Development (SRCD) 2015 Biennial Meeting, Philadelphia, PA, United States.
- Wang, Z., & **Huang, Y.** (2013, April 18--20). *Attention, self-regulation, and looking at distractions in preschool Chinese children* [Poster presentation]. Society for Research in Child Development (SRCD) 2013 Biennial Meeting, Seattle, WA, United States.

Invited Talks and Public Engagement (13)

- Huang, Y.**, & John, F. (2023, May 6). *VR experience of being a teacher* [Talk]. Potsdamer Tag der Wissenschaften [Potsdam Science Day], Potsdam, Germany.
- Richter, E., Yizhen, H., John, F., & Schmidt, E. (2023, April 13). *Virtual Reality in der Lehrkräftebildung und Lehrkräfteforschung* [Virtual reality in teacher education and teacher research] [Talk]. Fachtagung 3D erleben – lernraum.zukunft.gestalten [Symposium on 3D experience - learning space.future.design], Dillingen, Germany.

- Huang, Y.** (2023, February 24). *Potsdam VR classroom: Applications for teacher training and research* [Talk]. Module of Immersive Learning Environments from the Swiss Competence Centre for Innovations in Learning, St.Gallen, Switzerland.
- Huang, Y.** (2022, November 17). *Virtual reality based learning: The why and how* [Talk]. Deutscher Akademischer Austauschdienst [German Academic Exchange Service] (DAAD) International Alumni Seminar 2022: The Future of Education – Overcoming Educational Inequality Through Innovation, Potsdam, Germany.
- Huang, Y.** (2022, September 7). *Uncoil preservice teachers' experiences through virtual reality experiments* [Talk]. The Gerald H. Read Center for International and Intercultural Education Guest Talk, Kent State University, Kent, OH, United States.
- Huang, Y.** (2022, June 20). *Professional vision in virtual reality: Experimental investigations of preservice teachers' noticing* [Talk]. Research Colloquium of Eye Tracking Working Group in Methods of Empirical Classroom Research, University of Augsburg, Germany.
- Huang, Y.** (2022, May 12). *Teach in virtual reality (VR): Experimental investigations of preservice teachers' behaviors in a VR classroom* [Talk]. Research Colloquium of Department of Educational Research and Educational Psychology, IPN – Leibniz Institute for Science and Mathematics Education, Kiel, Germany.
- Huang, Y.** (2022, March 4). *Features and applications of the Potsdam virtual reality classroom* [Talk]. Module of Immersive Learning Environments from the Swiss Competence Centre for Innovations in Learning, St.Gallen, Switzerland.
- Huang, Y.** (2021, December 8). *Classroom features and preservice teachers' behaviors: Experimental investigations in a virtual reality (VR) classroom* [Talk]. Research Colloquium of the Professorships at the Department of Educational Science, University of Potsdam, Potsdam, Germany.
- Huang, Y.** (2018, October 24). *Learning from teacher's eye movement: Expertise, subject matter and video modeling* [Talk]. Research Colloquium of the Professorships at the Department of Educational Science, University of Potsdam, Potsdam, Germany.
- Huang, Y.** (2017, February 8). *Effects of modeling on delay of gratification among Chinese preschoolers: Testing a new method for assessing self-control* [Talk]. Combined Program in Education and Psychology Colloquium Series, University of Michigan, Ann Arbor, MI, United States.
- Huang, Y.** (2015, October 21). *Looking through you: First-person perspective video affects Chinese preschoolers' sex-typed toy choices* [Talk]. Combined Program in Education and Psychology Colloquium Series, University of Michigan, Ann Arbor, MI, United States.

Teaching Experience

Education on the Horizon: Teaching and Learning with Technology

[seminar for Bachelor and Master] Instructor

University of Potsdam

2019–Present

Enhance Teaching and Learning through the Perspective of Cognitive Psychology

[seminar for Bachelor and Master] Instructor

University of Potsdam

2018–Present

Understand Schooling through the Lens of Cross-cultural Comparisons

[seminar for Bachelor and Master] Instructor

University of Potsdam/Kiel

University

2018–Present

Educational Psychology and Human Development

[Undergraduate seminar] Graduate Student Instructor

University of Michigan

2016

Research Methods in Educational and Cross-cultural Contexts

[Undergraduate seminar] Graduate Student Instructor

University of Michigan

2015

Introduction to Psychology

[Undergraduate seminar] Graduate Student Instructor

University of Michigan

2014–2017

Psychology Subject

High School Teacher

Gucheng High School, China

2012

Thesis Supervision

Comparing Eye Movement of German and English Teachers

Megan Lake, University of Potsdam

Master Thesis

Ongoing

Exploring the Pedagogical Potential: Digital Tools and Their Roles in Foreign Language Learning in the Classroom

Larissa Genz, University of Potsdam

Bachelor Thesis

Ongoing

Das Zusammenspiel von Stress und Bewegung im Klassenzimmer [The Interplay of Stress and Movement in the Classroom]

Fabian John, University of Potsdam

Bachelor Thesis

Ongoing

Distribution of Preservice Teachers' Visual Attention in Regard to Seating Positions in a Virtual Reality Classroom

Julia Schwirczek, University of Potsdam

Master Thesis

Ongoing

How Stress Impacts Preservice Teachers' Vocabulary During Teaching in Virtual Reality

Von Georg Felix Reuth, University of Potsdam

Master Thesis

May 2023

Are Comic Books Suitable for Teaching Second

Language?—Example of English in German Secondary Education

Lennert Schulze, University of Potsdam

Bachelor Thesis

Oct 2020

Berufliches Lernen von Lehrkräften am Arbeitsplatz [Professional Learning of Teachers in the Workplace]

Anna-Katharina Czwalinna, University of Potsdam

PhD Thesis

May 2020

Die Aufmerksamkeitsverteilung von Praxissemesterstudierenden und erfahrenen Lehrkräften und ihr Zusammenhang zur

Klassenführung [Attention Allocation of Teacher Trainees and Experienced Teachers and its Relationship to Classroom

Management]

Ann-Katrin Schäfer, University of Potsdam

Master Thesis

Jan 2020

Professional Certification

Graduate Teacher Certificate (GTC)

Professional certificate for college-level instructors

University of Michigan

2018

PEERRS (Program for Education and Evaluation in Responsible Research and Scholarship) Certificate

Certificate for responsible conduct of research

University of Michigan

2018

Other Professional Activities

Data Visualization Specialist

Digital Education & Innovation Lab, The Office of Academic Innovation, University of Michigan

Ann Arbor, MI, United States

2016–2017

- Responsible for managing, mining, analyzing and visualizing big data set for the Massive Open Online Courses provided by University of Michigan.

Program Leader

Global Course Connection in China, Center for Global and Intercultural Study, University of Michigan

Ann Arbor, MI, United States

2013–2017

- Responsible for leading international comparison studies both in US and China, as well as facilitating the cultural and academic exchange between American and Chinese college students.

Graphic Designer

Freelance

Virtual

2011–2018

- Graphic designer specialized in scientific illustration and data visualization

Professional Service

Ad-hoc Peer Review (21 reviews for 10 publications)

2022—Present: Asia Pacific Education Review (3)
2021—Present: Computers & Education (7)
2022—Present: Education Sciences (1)
2021—Present: European Journal of Teacher Education (1)
2023—Present: Frontiers in Education (1)
2022—Present: Frontiers in Psychology (2)
2022—Present: Learning: Research and Practice (1)
2022—Present: Teaching and Teacher Education (3)
2022—Present: Quality & Quantity (1)
2023—Present: Unterrichtswissenschaft [Teaching Science] (1)

Institutional Service

Colloquium Planning Committee

Department of Education

University of Potsdam

2023–Present

Admissions Committee

Combined Program in Education and Psychology

University of Michigan

2017–2018

Colloquium Planning Committee

Combined Program in Education and Psychology

University of Michigan

2016–2017

Communications Committee

Combined Program in Education and Psychology

University of Michigan

2014

Executive Committee Cohort Representative

Combined Program in Education and Psychology

University of Michigan

2013

Graduate Student Mentor

The Michigan Association of Psychology Scholars

University of Michigan

2013

Current Memberships

American Educational Research Association: Division C (Learning and Instruction), SIG 119 (Technology, Instruction, Cognition, and Learning), SIG 052 (Instructional Technology)

American Psychological Association: Division 7 (Developmental Psychology), Division 15 (Educational Psychology)

European Association for Research on Learning and Instruction: SIG 07

(Technology-Enhanced Learning And Instruction), SIG 11 (Teaching and Teacher Education)

Skills

Data Science	R, Mplus, SPSS, Tableau, Python
Reproducible Report	Markdown, org-babel, LaTeX, Pandoc
Programming Languages	C/C++/C#
Apparatus	SMI Mobile Eye-tracking system, Tobii Eye-tracking system, Pupil Labs Eye-tracking system, HTC VIVE
Quantitative Methods	Hierarchical Linear Modeling, Structural Equation Modeling, Survey Design, Unsupervised/Supervised Machine Learning
Languages	English, Mandarin