FRANÇESKA XHAKAJ

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EDUCATION

2015 - present (expected Summer 2021)
Ph.D. Human-Computer Interaction
School of Computer Science, **Carnegie Mellon University**, Pittsburgh, PA
Dissertation: Creating Tools To Support Teachers, Their Teaching And To Help Them Improve Their Practices In The Classroom.
Advisor: Amy Ogan
Thesis Committee: John Zimmerman, Geoff Kaufman, Marsha Lovett

2015 - 2017
M.S. Human-Computer Interaction
School of Computer Science, Carnegie Mellon University, Pittsburgh, PA

2015 - present
PIER Fellowship Associate
Program for Interdisciplinary Education Research funded by the Institute of Education Sciences

2011 - 2015
GPA: 3.92/4.00
B.S. Computer Science
Lafayette College, Easton, PA
Minor in Mathematics
Summa Cum Laude, Honors in Computer Science
Thesis: Intelligent tutors and granularity: A new approach to Red Black Trees.
Advisor: Chun Wai Liew

AWARDS AND HONORS

2019 Alan J. Perlis Graduate Student Teaching Award, *Carnegie Mellon University*
This award honors graduate students who have displayed the highest degree of excellence in and dedication to teaching in the School of Computer Science at Carnegie Mellon University.

2019 Graduate Student Assembly Departmental Appreciation Award, *Carnegie Mellon University*

2015 Summa Cum Laude, Honors in Computer Science, *Lafayette College*

2014 UPE Special Recognition Award, *Upsilon Pi Epsilon International Honor Society for the Computing and Information Disciplines*

2014 James P. Schwar Prize, *Lafayette College*
Awarded annually to a deserving computer science student.

2011 - 2015 Walter Oechsle Scholarship, *Lafayette College*

2012, 2013 Grace Hopper Celebration of Women in Computing Scholarship, *Grace Hopper Conference*

TEACHING & MENTORING EXPERIENCE

TEACHING EXPERIENCE

Instructor
Principles of Computing (15-110), *Summer 2 2020*
School of Computer Science, Carnegie Mellon University
- Instructor (with Norman Bier) of the intro course 15-110, a course in fundamental computing principles. Due to the 2020 pandemic, this course was conducted fully online.
- Lead daily lectures over Zoom (~80 students) and designed online active learning activities.
- Worked on course and curriculum redesign to adapt the class to online learning.

Instructor **CS Pedagogy (15-890)**, *Spring 2020*
School of Computer Science, Carnegie Mellon University
- Instructor (with Charlie Garrod and Michael Hilton) of 15-890, a course targeted toward students who are interested in improving their ability to teach computer science and who are interested in the science of teaching and learning.
- Lead discussions on various topics about pedagogy and CS Education research.

Instructor **Principles of Computing (15-110)**, *Summer 2 2019*
School of Computer Science, Carnegie Mellon University
- Instructor (with Norman Bier) of the course 15-110, a course in fundamental computing principles
- Lead daily lectures (~50 students) and designed active learning activities.
- Designed exam questions, held office hours, mentored students.

Head TA **User-Centered Research and Evaluation (UCRE)**, *Fall 2018*
Human-Computer Interaction Institute, Carnegie Mellon University
- Supported course and curriculum redesign, decided topics/concepts for the course, created learning goals for projects/assignments, structured projects/assignments over the semester.
- Created assignments, projects and questions for the final exam.
- Designed grading rubrics for assignments/the exam and graded individual and group work.
- Taught recitation (20 students), supervised individual and group work, held office hours.

TA **Programming Usable Interfaces (PUI)**, *Spring 2018*
Human-Computer Interaction Institute, Carnegie Mellon University
- Taught recitation (20 students).
- Designed labs and homework assignments, created quiz and exam questions, graded student work, held office hours.

TA **Algorithms and Data Structures (CS150),** *2013 – 2014*
Department of Computer Science, Lafayette College
- Led and oversaw lab sessions, built some assignments and lab worksheets.

TEACHING GUEST LECTURES

Grad research seminar on Second Language Acquisition, *Fall 2019*
Department of Modern Languages, Carnegie Mellon University
Lecture on my work on ClassInSight and using data to help support teacher in their teaching.

Programming Usable Interfaces (PUI), *Fall 2019*
Human-Computer Interaction Institute, Carnegie Mellon University
Lecture on how to prototype with the InVision technology.

Programming Usable Interfaces (PUI), *Spring 2018*
Human-Computer Interaction Institute, Carnegie Mellon University
Lecture on user-centered design methods and examples of their use in my own research.

STUDENT MENTORING AND ADVISING

Throughout my Ph.D., I have had the honor to work with many outstanding students, undergraduates and masters, from CMU and other schools. Their majors were interdisciplinary including CS, HCI, design, business, statistics, etc. The majority of the students were from underrepresented groups in STEM.

Undergraduate Independent Study and Research Assistants, *Fall 2020*
Mentoring one undergraduate student in their Independent Study, three undergraduate students and one master student as Research Assistants on the ClassInSight project.

Research Experience for Undergraduates (REU), *Summer 2020*
Mentored two undergraduate students in their REU projects (ClassInSight and ProI for Professionals).

Undergraduate Independent Study and Research Assistants, *Spring 2020*
Mentored a master student in their Independent Study and six undergraduate and master students as Research Assistants on the ClassInSight project.

Undergraduate Independent Study and Research Assistants, *Fall 2019*
Mentored sixteen undergraduates and masters Research Assistants students on the ClassInSight project.

Research Experience for Undergraduates (REU), *Summer 2019*
Mentored five students as they conducted research and software development on ClassInSight.

Undergraduate Independent Study, *Fall 2018, Spring 2019*
Mentored two undergraduate students each semester in their Independent Study projects on ClassInSight.

Research Experience for Undergraduates (REU), *Summer 2016*
Mentored five students as they conducted research and software development on an Intelligent Tutoring Systems.

LearnLab Summer School at CMU, ITS Track, *Summer 2015 - 2018*
Supervised small group projects in developing Intelligent Tutoring Systems for various domains.

PROFESSIONAL DEVELOPMENT

2018 - present **Future Faculty Program,** *Eberly Center Teaching Excellence & Education Innovation, CMU*
Attended various professional development workshops and seminars which covered a wide range of topics on teaching and learning. Received feedback twice on my teaching through classroom observations and microteaching workshops. Completed a statement of teaching philosophy project.

2015 - present **Program for Interdisciplinary Education Research (PIER)**, *Carnegie Mellon University*
Attended research seminars from various educational researchers. Networked and received mentoring from educational experts. Took a range of courses on education including *Research Methods for the Learning Sciences (05-748)*, *Educational Goals, Instruction and Assessment (85-738)*, *Scientific Research in Education (85-736)*, *Personalized Online Learning (05-832)*.

Fall 2018 **Computer Science Pedagogy (15-539/15-890)***, Carnegie Mellon University*
Took this course which was aimed at helping students improve their ability to teach computer science.

RESEARCH EXPERIENCE

2019 - present *Project:* ClassInSight: Practical Classroom Sensing at Scale for Instructor Professional Development
with Dr. Amy Ogan, Dr. Chris Harrison, Dr. Yuvraj Agarwal, *Carnegie Mellon University*

2018 *Project*: Improving Introductory Computer Programming Instruction by Supporting Conceptual Learning with an Intelligent Tutoring System
with Dr. Vincent Aleven, *Carnegie Mellon University*

2015 - 2018 *Project*: Helping Teachers Help Students: Teacher's Use of Intelligent Tutoring Systems Analytics to Improve Learning
with Dr. Vincent Aleven and Dr. Bruce M. McLaren, *Carnegie Mellon University*

Summer 2015 *Project*: Integrating Errors into the Lynnette Cognitive Tutor, an Intelligent Tutoring System for Linear Equation Solving
with Dr. Vincent Aleven, *Carnegie Mellon University*

Summer - Fall 2014 *Project*: Integrating Intelligent Tutoring Systems in MOOCs (Massive Open Online Courses)
Undergraduate Student Researcher with Dr. Vincent Aleven, *Carnegie Mellon University*

Spring 2014 *Project*: Creating tutors to support geology field projects
EXCEL Student Researcher with Dr. Chun Wai Liew, *Lafayette College*

January 2013 *Project*: Computational Modeling of Fish Evolution
EXCEL Student Researcher with Dr. Chun Wai Liew, *Lafayette College*

Summer 2013 *Project*: Studying the dynamic behavior of JavaScript objects
Undergraduate Student Researcher with Dr. Barbara G. Ryder, *PROLANGS@VT, Virginia Tech*

Summer 2013 *Project*: Using HMM and the Viterbi Algorithm on the Iterated Diner's Dilemma game
EXCEL Student Researcher with Dr. Chun Wai Liew, *Lafayette College*

CONFERENCE PUBLICATIONS

C1. **Xhakaj, F**., Ogan, A. (2021). ClassInSight for Supporting Teacher Goal Setting and Behavior Change in the Classroom. *Under submission at the **CHI 2021** conference.*

C2. **Xhakaj, F**., Ogan, A., Zimmerman, J. (2021). Reframing PI as ProI: Exploring Opportunities and Barriers for Professional Informatics. *Under submission at the **CHI 2021** conference.*

C3. Ahuja, K., Shah, D., Pareddy, S., **Xhakaj, F.**, Ogan, A., Agarwal, Y., Harrison, Ch. (2021) Classroom Digital Twins with Instrumentation-Free 6DOF Gaze Tracking. *Under submission at the **CHI 2021** conference.*

C4. Ahuja, K., Kim, D., **Xhakaj, F**., Varga, V., Xie A., Zhang, S., Townsend, J. E., Harrison, Ch., Ogan, A., & Agarwal, Y. (2019). EduSense: Practical Classroom Sensing at Scale. *Proc. **ACM Interact. Mob. Wearable Ubiquitous Technol.***

C5. **Xhakaj, F.**, & Aleven, V. (2018). Towards Improving Introductory Computer Programming with an ITS for Conceptual Learning. In *International Conference on Artificial Intelligence in Education, **AIED 2018**,* pp. 535-538.

C6. Bodily, R., Kay, J., Aleven, V., Davis, D., Jivet, I., **Xhakaj, F** & Verbert, K. (2018) Open learner models and learning analytics dashboards: A systematic review. In *Proceedings of the International Conference on Learning Analytics and Knowledge, **LAK 2018**,* pp. 41-50.

C7. **Xhakaj, F.**, Aleven, V., McLaren, B.M. (2017). Effects of a Teacher Dashboard for an Intelligent Tutoring System on Teacher Knowledge, Lesson Planning, Lessons and Student Learning. In *Proceedings of the European Conference on Technology Enhanced Learning, **EC-TEL 2017**, pp.* 315-329.

C8. **Xhakaj, F.**, Aleven, V., McLaren, B.M. (2017). Effects of a dashboard for an intelligent tutoring system on teacher knowledge, lesson plans and class sessions. In *Proceedings of the International Conference on Artificial Intelligence in Education, **EC-TEL 2017**, pp.* 582-585.

C9. **Xhakaj, F.**, Aleven, V., McLaren, B.M. (2016). How teachers use data to help students learn: Contextual Inquiry for the design of a dashboard. In *Proceedings of the European Conference on Technology Enhanced Learning, **EC-TEL 2016**, pp.* 340-354.

C10. Aleven, V., **Xhakaj, F.**, Holstein, K, & McLaren, B. M. (2016). Developing a teacher dashboard for use with ITSs. In *Proceedings of the International Workshop on Teaching Analytics, **ECTEL 2016***.

C11. Holstein, K., **Xhakaj, F.**, Aleven, V., & McLaren, B. M. (2016). Luna: A dashboard for teachers using intelligent tutoring systems. In *Proceedings of the International Workshop on Teaching Analytics, **ECTEL 2016***.

C12. Aleven, V., Sewall, J., Popescu, O., **Xhakaj, F.**, Chand, D., Baker, R. S., & Gasevic, D. (2015). The beginning of a beautiful friendship? Intelligent tutoring systems and MOOCs. In *Proceedings of the International Conference on Artificial Intelligence in Education, **AIED 2015**,* pp. 525–528.

C13. Liew, C. W., & **Xhakaj, F.** (2015). Teaching a complex process: Insertion in Red Black Trees. In *Proceedings of the International Conference on Artificial Intelligence in Education, **AIED 2015**,* pp. 698–701.

C14. **Xhakaj, F.**, & Liew, C. W. (2015). A new approach to teaching Red Black Trees. In *Proceedings of the Conference on Innovation and Technology in Computer Science Education, **ITiCSE '15***, pp. 278–283.

JOURNAL PUBLICATIONS

J1. Wei, Sh., **Xhakaj, F.**, & Ryder, B.G. (2015) Empirical Study of the Dynamic Behavior of JavaScript Objects. *Journal of Software: Practice and Experience, 46*, 7, 867–889.

UNPUBLISHED SENIOR THESIS

T1. **Xhakaj, F.** (2015). Intelligent tutors and granularity: A new approach to Red Black Trees. Unpublished senior thesis, Department of Computer Science, Lafayette College, Easton, Pennsylvania. USA.

LEADERSHIP AND SERVICE

PROFESSIONAL SERVICE

2020 Invited panelist on graduate school panel, *Georgetown University*

2021 Reviewer for Papers in Computing Education Research**,** *SIGCSE 2021*

2019 Reviewer for Papers in Late Breaking Work**,** *CHI 2019*

2019 Grad School Panel Moderator and conference organizer in the *Opportunities for Undergraduate Research in Computer Science (OurCS) conference*

2018 Student volunteer**,** *SIGCSE 2018*

2017 Organizer and Moderator in the *Opportunities for Undergraduate Research in Computer Science (OurCS) conference*

INSTITUTIONAL SERVICE

2019 - present **Director and founder of the Community for Teaching and CS Education at CMU**
Carnegie Mellon University
Working with teaching professors and students to build and develop a community at CMU for faculty and students who are interested in teaching and CS Education

2017 - 2019 **Women in SCS**, leader and in organizing committee, *Carnegie Mellon University*

2017 - 2018 SCS4ALL Ph.D. Initiative, organizing committee, *Carnegie Mellon University*

2012 - 2015 Founder and President , Women in Computing, *Lafayette College*

2014 - 2015 President of Upsilon Pi Epsilon (International Honor Society for the Computing and Information Disciplines), *Lafayette College*

DEPARTMENT SERVICE

2019 - 2020 Student representative in the HCII **Curriculum Committee**

2019 - 2020 Student representative in the HCII **Faculty Hiring Committee**

2018 - 2019 HCII Ph.D. Tea Time Social

2016 - 2017 HCII Ph.D. Monthly Lunch Gatherings

2015, 2019 HCII Prospective Ph.D. Student Open House Organizer

SKILLS

▲ Programming

Java, Python, JavaScript, HTML, CSS, C++, C, R, Jess, Intel IA32

▲ Tools

CTAT, Django, Ajax, jQuery, Heroku, NodeJs, SQLite, LaTex, Mathematica, WordPress, Sketch, InVision, Adobe: Photoshop, Flash Player, InDesign

▲ Research Methods

Contextual Inquiry, Interpretation Sessions, Affinity Diagramming, Speed Dating, Storyboarding, Prototyping, Think Alouds, Classroom Studies

▲ Languages

English, Albanian, Italian, French, Greek, Korean