

## Yuan Chang

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CONTACT INFORMATION & WEBSITES	1659 Drew cir Davis, CA 95618 <a href="https://itis2010me.github.io/itis2010me/">https://itis2010me.github.io/itis2010me/</a> <a href="https://www.linkedin.com/in/yuan-chang-26b425203/">https://www.linkedin.com/in/yuan-chang-26b425203/</a>	(530) 760-6690 <a href="mailto:merchang@ucdavis.edu">merchang@ucdavis.edu</a>
EDUCATION	<b>University of California, Davis, CA</b> B.S. Computer Science, Sept 2018 - Jun 2022 <ul style="list-style-type: none"><li>• Minor in Mathematics.</li><li>• UC GPA: 3.9/4.0, <b>Major GPA: 3.950.</b></li><li>• Algorithm design and analysis, Computer Architecture, Scientific Computation, Artificial Intelligence, System programming, Regression, Optimization.</li></ul>	
PROGRAMMING LANGUAGES	Proficient: C/C++, Python, L <sup>A</sup> T <sub>E</sub> X, MATLAB, R, Unix, Shell script, HTML Familiar: Rust, Swift, Clisp, Prolog, Perl, Java, Maple, RISC-V	
INTERNSHIP & EXPERIENCE	<b>UC Davis Applied Mathematics Summer Research</b> Research student June 2021 - Feb 2022 <ul style="list-style-type: none"><li>• Study both theoretical Ramsey Theory and computational methods.</li><li>• Modify and write scripts to aid computation.</li><li>• Using Boolean algebra(SAT) to significantly reduce the cost of computation.</li><li>• Research under the supervision of Prof. Jesús De Loera and William Wesley.</li></ul> <b>International Family Union</b> Teaching Associate Summer 2020 - 2021 <ul style="list-style-type: none"><li>• Teaching in Computer Science.</li><li>• Design and taught areas such as Unix, C++, algorithms and data structures.</li><li>• Introduce advanced topics such as dynamic memory management and recursion.</li></ul>	
PERSONAL PROJECTS & RESEARCH PAPERS	<b>Digit Recognition with MNIST Databset of Handwritten Digits (2022)</b> <ul style="list-style-type: none"><li>• Analyze and implement Centroid and PCA algorithms in MATLAB for hand-written digit recognition.</li><li>• Training data set over 60,000 digits and testing data set over 10,000. Achieved overall success rate of around 85%.</li></ul> <b>Computations with Rado numbers and degree of regularity (2021)</b> <ul style="list-style-type: none"><li>• Advancements in terms of Rado Numbers and degree of regularity.</li><li>• Research paper accepted to 2022 ISAAC conference, France.</li><li>• Co-author with Professor Jesús De Loera and William Wesley.</li></ul> <b>Robotic Arm Project (2020)</b> <ul style="list-style-type: none"><li>• Study of a specialized two segments robotic arm with computational geometric algebra.</li><li>• Analysis of many real life robotic arm problems such as kinematics singularity and reversed kinematics problems.</li></ul>	

CONFERENCE &  
TALKS

**UC Davis Undergraduate Research Conference 2021**

Title: Ramsey Theory and Automatic Theorem Proving

- Present the background and theory on Ramsey Number research.
- Live demo session showing the entire system and experiment process.
- Promote mathematics and computer science research at the undergraduate level.

The Link to the presentation slides in L<sup>A</sup>T<sub>E</sub>X.

PUBLICATIONS

**Rado Numbers and SAT Computations.**

Proceedings of the 47th International Symposium on Symbolic and Algebraic Computation (ISSAC 2022). Pages 333 – 342 available online at [https : //doi.org/10.1145/3476446.3535494](https://doi.org/10.1145/3476446.3535494)

LANGUAGES

*Native:* Chinese, *Fluent:* English, *Beginner:* French