

# Xi Chen

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## EDUCATION

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### The University of Arizona

*Ph.D. in Systems and Industrial Engineering*  
*M.S. in Statistics*

Tucson, AZ

*Aug. 2018 – Present*  
*Aug. 2020 – Present*

### Beihang University

*M.S. in Control Science and Engineering*  
*B.S. in Quality and Reliability Engineering*

Beijing, China

*Sep. 2015 – Mar. 2018*  
*Sep. 2011 – Jun. 2015*

### Peking University

*B.S. in Economics (dual degree), National School of Development*

Beijing, China

*Sep. 2014 – Jun. 2017*

## PROJECTS

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### Gaussian Process Regression with tensorial data input | *Python, R, Ansys*

Nov. 2018 – Present

- Built surrogate model based on Gaussian process to approximate expensive computer simulations following machine learning pipeline, tuning hyperparameters to achieve high prediction accuracy
- Applied a novel distance metric on the supervised learning problem with high dimensional input and functional output. Adopted some dimension reduction and scalable techniques, e.g., PCA, B-spline, compact support, sparse matrix, curve registration
- Compared popular distance-based experiment designs for 2D and 3D image input with spatial relationship among pixels considered, e.g., Maximin, MSPE-based
- Implemented Bayesian optimization with exploration and exploitation trade-off on a multi-resolution structure

### Color normalization on medical images | *Python, MATLAB, Minitab*

Jun.-Nov. 2020

- Evaluated the effects of different factors on color rendition with ColorChecker: ambient color temperature, distance, light intensity and different time of the day; Applied two-way ANOVA test to verify the effects significance
- Normalized all the testing images in RGB color space, algorithm performance measured by angular error

### Installation Prediction of Google Play Store Apps | *Python*

Nov. 2020

- Applied 4C principal for data imputation, cleansing and manipulation, verifying model assumptions
- Fitted and justified a linear model first, then applied ridge regression for multicollinearity mitigation

### Local high school dining service design under CDC guidance | *AnyLogic, Java*

Jun. 2020

- Developed a simulation model to visualize and analyze how the student flows behave during lunch service
- Proposed a strategic design on the dining hall layout, flow route, service time, number of lunch sessions, etc.

### Parameters inference of a 3D line from a noisy 2D image | *Python, TravisCI, Git*

Dec. 2019

- Implemented Metropolis Hastings algorithm to approximate the posterior distribution with different starting end-points, Compared the maximum posterior estimates obtained from one camera setting and two cameras setting

## PUBLICATIONS

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**Chen, X.**, Sharma, Y., Zhang, H. H., Xin, H., Zhou, Q., *Gaussian Process model with tensorial data inputs and its application to design of printed antennas* (under revision)

Sharma, Y., **Chen, X.**, Wu, J., Zhou, Q., Zhang, H. H., Xin, H. (2022). *Machine learning methods-based modeling and optimization of 3-D-Printed dielectrics around monopole antenna*. IEEE Transactions on Antennas and Propagation, 70(7), 4997-5006.

## TECHNICAL SKILLS

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**Machine Learning:** Python (Pandas, NumPy, SciPy, sklearn, Matplotlib), MATLAB

**Statistical Analysis:** R, Minitab, SAS

**Others:** ROS, CARLA, Autoware, SQL, Git, Anaconda, TravisCI, L<sup>A</sup>T<sub>E</sub>X