Stanford



Brad Osgood

Professor of Electrical Engineering, Emeritus

Bio

BIO

Osgood is a mathematician by training and applies techniques from analysis and geometry to various engineering problems. He is interested in problems in imaging, pattern recognition, and signal processing.

ACADEMIC APPOINTMENTS

- Professor, Electrical Engineering
- Member, Bio-X
- Member, Institute for Computational and Mathematical Engineering (ICME)

PROGRAM AFFILIATIONS

- Science, Technology and Society

PROFESSIONAL EDUCATION

- PhD, Michigan (1980)

Research & Scholarship

RESEARCH INTERESTS

- Learning Technologies
- Mathematics Education

Teaching

COURSES

2026-27

- Introduction to Matrix Methods: ENGR 108 (Win)
- The Fourier Transform and Its Applications: EE 261 (Aut)

2025-26

- Introduction to Matrix Methods: ENGR 108 (Win)
- The Fourier Transform and Its Applications: EE 261 (Aut)

2024-25

- Introduction to Matrix Methods: ENGR 108 (Win)

- The Fourier Transform and Its Applications: EE 261 (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Ibrahim Gulluk

Master's Program Advisor

Marissa Kuo, Pengyu Mo

Doctoral (Program)

Peijing Li, Marina Qian, Tom Stone, Sarah Zou

Publications

PUBLICATIONS

- **Peter Larkin Duren 1935-2020** *COMPUTATIONAL METHODS AND FUNCTION THEORY*
  Osgood, B.
  2025
- **Fast DFT Computation for Signals With Structured Support** *IEEE TRANSACTIONS ON INFORMATION THEORY*
  Pochimireddy, C., Siripuram, A., Osgood, B.
  2024; 70 (2): 1498-1524
- **Best Möbius Approximations of Convex and Concave Mappings** *COMPUTATIONAL METHODS AND FUNCTION THEORY*
  Chuaqui, M., Osgood, B.
  2023
- **On convolution, convex, and starlike mappings** *STUDIA UNIVERSITATIS BABES-BOLYAI MATHEMATICA*
  Chuaqui, M., Osgood, B.
  2022; 67 (2): 431-440
- **Computing the Discrete Fourier Transform of signals with spectral frequency support**
  Reddy, P., Tej, V., Siripuram, A., Osgood, B., IEEE
  IEEE.2021: 2381-2386
- **Convolution Idempotents With a Given Zero-Set** *IEEE TRANSACTIONS ON SIGNAL PROCESSING*
  Siripuram, A., Osgood, B.
  2020; 68: 4773–81
- **Some results on convolution idempotents**
  Reddy, P., Siripuram, A., Osgood, B., IEEE
  IEEE.2020: 1462-1467
- **Discrete Sampling: A Graph Theoretic Approach to Orthogonal Interpolation** *IEEE TRANSACTIONS ON INFORMATION THEORY*
  Siripuram, A., Wu, W. D., Osgood, B.
  2019; 65 (12): 8119–30
- **A NOTE ON CONVEX CONFORMAL MAPPINGS** *PROCEEDINGS OF THE AMERICAN MATHEMATICAL SOCIETY*
  Chuaqui, M., Osgood, B.
  2019; 147 (6): 2655–59
- **LP relaxations and Fuglede's conjecture**
  Siripuram, A., Osgood, B., IEEE
  IEEE.2018: 2525–29
- **CONCAVE CONFORMAL MAPPINGS AND PRE-VERTICES OF SCHWARZ-CHRISTOFFEL MAPPINGS** *PROCEEDINGS OF THE AMERICAN MATHEMATICAL SOCIETY*

Chuaqui, M., Duren, P., Osgood, B.
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- **Discrete Sampling and Interpolation: Universal Sampling Sets for Discrete Bandlimited Spaces** *IEEE TRANSACTIONS ON INFORMATION THEORY*
  Osgood, B., Siripuram, A., Wu, W.
  2012; 58 (7): 4176-4200
- **SCHWARZIAN NORMS AND TWO-POINT DISTORTION** *PACIFIC JOURNAL OF MATHEMATICS*
  Chuaqui, M., Duren, P., Ma, W., Mejia, D., Minda, D., Osgood, B.
  2011; 254 (1): 101-116
- **SCHWARZIAN DERIVATIVES OF CONVEX MAPPINGS** *ANNALES ACADEMIAE SCIENTIARUM FENNICAE-MATHEMATICA*
  Chuaqui, M., Duren, P., Osgood, B.
  2011; 36 (2): 449-460
- **Schwarzian Norms and two-point distortion** *Paci c J. Math*
  Chuaqui, M., Duren, P., Ma, W., Mejía, D., Minda, D., Osgood, B.
  2011; 254-1: 101–116
- **On a Theorem of Haimo regarding concave mappings** *Annales Univ. Marie Curie-Sklodowska, Mathematica*
  Chuaqui, M., Duren, P., Osgood, B.
  2011; 65 (2): 17-28
- **Schwarzian derivatives of convex mappings** *Ann. Acad. Sci. Fenn.*
  Chuaqui, M., Duren, P., Osgood, B.
  2011; 36: 449–460
- **Injectivity Criteria for Holomorphic Curves in C-n** *PURE AND APPLIED MATHEMATICS QUARTERLY*
  Chuaqui, M., Duren, P., Osgood, B.
  2011; 7 (1): 223-251
- **OSCILLATION OF SOLUTIONS OF LINEAR DIFFERENTIAL EQUATIONS** *BULLETIN OF THE AUSTRALIAN MATHEMATICAL SOCIETY*
  Chuaqui, M., Duren, P., Osgood, B., Stowe, D.
  2009; 79 (1): 161-169
- **TWO-POINT DISTORTION THEOREMS FOR HARMONIC MAPPINGS** *ILLINOIS JOURNAL OF MATHEMATICS*
  Chuaqui, M., Duren, P., Osgood, B.
  2009; 53 (4): 1061-1075
- **Falling factorials, generating functions, and conjoint ranking tables** *Journal of Integer Sequences*
  Osgood, B., Wu, W.
  2009; 12
- **Schwarzian derivatives and uniform local univalence** *Comp. Methods in Function Theory.*
  Chuaqui, M., Duren, P., Osgood, B.
  2008; 8 (1): 21–34
- **Schwarzian derivative criteria for valence of analytic and harmonic mappings** *MATHEMATICAL PROCEEDINGS OF THE CAMBRIDGE PHILOSOPHICAL SOCIETY*
  Chuaqui, M., Duren, P., Osgood, B.
  2007; 143: 473-486
- **Univalence criteria for lifts of harmonic mappings to minimal surfaces** *JOURNAL OF GEOMETRIC ANALYSIS*
  Chuaqui, M., Duren, R., Osgood, B.
  2007; 17 (1): 49-74
- **A generalization of Nehari's p-criterion for univalence** *Complex Variables and Elliptic Equations*
  Chuaqui, M., Osgood, B.
  2007; 52: 225– 233

- **Schwarzian derivatives of analytic and harmonic functions** *International Conference on Complex and Hormonic Analysis*
  Chuaqui, M., Duren, P., Osgood, B.
  DESTECH PUBLICATIONS, INC.2007: 25–33
- **Applied Calculus**
  Osgood, B., Gleason, A., Hallett, D. H.
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- **Ellipses, near ellipses, and harmonic Mobius transformations** *PROCEEDINGS OF THE AMERICAN MATHEMATICAL SOCIETY*
  Chuaqui, M., Duren, P., Osgood, B.
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- **Ellipses, near ellipses, and harmonic Möbius transformations**
  Chuaqui, M., Duren, P., Osgood, B.
  2005
- **Calculus**
  Osgood, B., Gleason, A., Hallett, D. H.
  John Wiley & Sons, New York.2005
- **Single and Multivariable Calculus**
  Osgood, B., Gleason, A., Hallett, D. H.
  John Wiley & Sons, New York.2005
- **Multivariable Calculus**
  Osgood, B., Gleason, A., Hallett, D. H.
  John Wiley & Sons, New York.2005
- **Optimal variable-density K-SPACE sampling in MRI** *2nd IEEE International Symposium on Biomedical Imaging*
  Lee, J. H., Osgood, B., Nishimura, D. G.
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- **Curvature properties of planar harmonic mappings** *Comp. Methods in Function Theory*
  Chuaqui, M., Duren, P., Osgood, B.
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  Chuaqui, M., Osgood, B.
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  Chuaqui, M., Osgood, B., Pommerenke, Ch.

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- **John domains, quasidisks, and the Nehari class** *JOURNAL FUR DIE REINE UND ANGEWANDTE MATHEMATIK*
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- **COMPACT ISOSPECTRAL SETS OF PLANE DOMAINS** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
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