

J A Stephen Viggiano

Digital Imaging Color Scientist & Educator

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RESEARCH INTERESTS

- Derivation and evaluation of mathematical models for the colorimetric behavior of color hard-copy systems, including ink-jet, photographic, electrophotographic, and traditional graphic arts
- Colorimetric Characterization of color input and output devices; particularly scanners, digital cameras, printers, displays, and printing processes
- Development and evaluation of algorithms for digital image reproduction, including gamut-related calculations, sampling and re-sampling, anti-aliasing, halftoning, and morphing of type and graphic primitives
- Investigation of interaction between materials for color imaging, particularly between ink and substrate

PROFESSIONAL SKILLS

Experienced as a Lecturer and Teacher; has short courses prepared for Digital Halftoning, Color Measurement, and Test Target Theory and Design. Teaches undergraduate and graduate-level courses in Printing and Imaging; advises graduate students on theses.

Derivation and evaluation of mathematical models for the colorimetric behavior of color imaging systems, particularly hardcopy devices.

Analysis and Specification of Tone and Color Reproduction for Digital Imaging Systems.

Statistical and Mathematical Analysis; experienced with SAS, Systat, and MATLAB.

Computer Programming: C and FORTRAN 77 for focused applications and/or demonstration/prototype purposes. Experienced with Postscript language programming; creates Test Targets, builds Color Rendering Dictionaries (CRDs) for managed color, and Halftone Dictionaries for moiré minimization.

Applications Software: Experienced user of Quark XPress, Adobe Photoshop, Macromedia Freehand, Adobe Persuasion, Microsoft Excel.

Operating Systems and Environments: Macintosh, Unix/Linux, MS NT/95/98/2000

PROFESSIONAL HISTORY

Acolyte Color Research, Henrietta, NY

March, 2002 - Present: Principal

RIT Research Corporation, 125 Tech Park Drive, Rochester, NY 14623

July, 2000 - November, 2001: Principal Imaging Scientist

Served as Principal Investigator and Senior Technical Contributor on numerous projects relating to quality of digital imaging systems, including a project involved with the dynamic selection of a Color Reproduction Algorithm based upon image attributes, in an ICC-like framework. Prepared written reports, proposals, and software specifications.

July, 1991 - June, 2000: Senior Imaging Scientist, Imaging Division

Served as Principal Investigator in projects relating to: Colorimetric Characterization and Calibration of several Hardcopy Output Devices (Lithographic, Ink Jet, Electrographic, Thermal Transfer); Image Quality; Device-Independent Color and Color Management; Tone and Color Reproduction Analysis; Construction of Linearized Halftone Threshold Arrays; and a unique project relating to color matching for a point-of-sale cosmetics workstation. Prepared proposals, client reports, and software specifications.

June, 1987 - June, 1991: Associate Research Scientist

Assisted senior research staff in the investigation of diverse topics in image quality and device-independent color.

Rochester Institute of Technology, 69 Lomb Memorial Drive, Rochester, NY 14623

December, 1991 - November, 2001: Adjunct Member of the Graduate Faculty, School of Printing Management & Sciences

Taught graduate and undergraduate courses in Graphic Reproduction Theory, Ink, Applied Color Theory, Printing Substrates, Research Methods, and the Physical Sciences. Multiple nominee for Eisenhart Award for Excellence in Teaching. Advised students on theses and independent study projects.

SELECTED PUBLICATIONS

Minimal Knowledge Assumptions in Digital Still Camera Characterization. I: Uniform Distribution, Toeplitz Correlation. *Proceedings of IS&T/SID's 9th Color Imaging Conference*, 2001. p 332-336.

A Metric for Comparison of Radiance Ratio Spectra and its Application as an Index of Metamerism. *Proceedings of AIC-2001*, in press.

Sid, Deepthi, and Viggiano, J. A. Stephen, Methods and Applications for Printer Color Gamut Visualization. *IS&T's NIP 16: International Conference on Digital Printing Technologies*, 2000. p 821.

Viggiano, J A Stephen, and Hoagland, William, Selection of Inks for Six-Color Lithographic Printing. *Proceedings of the Sixth IST/SID Color Imaging Conference*, 1998.

Viggiano, J. A. Stephen, and Moroney, Nathan, Color Reproduction Algorithms and Intent. *Proceedings of the Third IST/SID Color Imaging Conference*, 1995. p 152 - 154.

Moroney, Nathan, and Viggiano, J. A. Stephen, Color Imaging Using Variable Dot Thermal Wax Transfer. *Proceedings of the Second IS&T/SID Color Imaging Conference*, 1994. p 167-169.

Viggiano, J. A. Stephen, and Wang, C. Jeffrey, A novel method for the colorimetric calibration of color digitizing scanners. *1993 TAGA Proceedings*, p 143 - 160.

Tangvichachan, Theera; Sigg, Franz; and Viggiano, J A Stephen, Conversion of Solid Ink Density and Dot Gain Specifications into Colorimetric Specifications. *1993 TAGA Proceedings*, p 107 - 117.

Some Elements of Cross-Device Color Rendering. *IS&T Reporter*, 8 : 1, March 1993, p 1 - 3.

Viggiano, J. A. Stephen, and C. Jeffrey Wang, The Reproduction of Colors in Media Possessing Different Luminance Ranges. *1992 ISCC/TAGA Proceedings*, Volume 2, p 959 - 974.

Viggiano, J. A. Stephen, and C. Jeffrey Wang, A proposed Method for the Calculation of Colorimetric Densities. *1991 TAGA Proceedings*, p 196 - 215.

Comparison of Radiance Ratio Spectra: Assessing a Model's Goodness of Fit. *Advanced Printing of Conference Summaries, SPSE's 43rd Annual Conference*, 1990, p 222 - 225.

Gray Component Replacement: A Practical Approach. *Advanced Printing of Conference Summaries, SPSE's 43rd Annual Conference*, 1990, p 204 - 206.

Modeling the Color of Multi-Color Halftones. *1990 TAGA Proceedings*, p 44 - 62.

The Color of Halftone Tints. *1985 TAGA Proceedings*, p 647 - 661.

The GRL Dot Gain Model. *1983 TAGA Proceedings*, p 423 - 439.

UNPUBLISHED WORKS

Statistical Distribution of CIELAB Color Error, 1999, a contribution to CIE Technical Committee TC8-02.

Numerous papers and reports of a proprietary nature for corporate clients.

CREDIT COURSES TAUGHT

JPRT-316: Ink And Substrates
JPRT-700: Science And Mathematics For Graduates
JPRT-701: Research Methods In The Graphic Arts
JPRT-702: Graphic Reproduction Theory
JPRT-722: Ink, Color, and Substrates

EDUCATION

Rochester Institute of Technology, 1 Lomb Memorial Drive, Rochester, NY 14623

May, 1987: Master of Science, Printing Technology. Thesis: Models for the Reproduction of Color in Graphic Reproduction Technology.

November, 1984: Master of Science, Mathematical and Applied Statistics. Thesis: Non-linear Principal Component Analysis: Approximation by a Second-order Taylor Series.

Thomas A. Edison College, Trenton, NJ

February, 1982: Bachelor of Arts, Mathematics and Natural Science.

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

CIE TC8-02, Colour Difference Evaluation in Images

CIE TC8-03, Gamut Mapping

IS&T / SID Color Imaging Conference Technical Committee

Reviewer for *Journal of Imaging Science and Technology*

Advisor, RIT student chapter of the Technical Association of the Graphic Arts (TAGA)

REFERENCES

are available upon request, after mutual interest has been established.