

- P.O. Box 20486 Yaounde, Cameroon ☎(237) 99 63 29 26 📠(237) 22 22 45 47 ~ <http://gwet.visualstat.com>

## PROFILE

Doctor of Mathematics, Consultant & Research Scientist with state-of-the-art expertise in computer systems development, fuzzy logic, mathematical & computing methods with fuzzy data, multivariate data analysis, operations research, transport economics, and health economics. University Professor of Mathematics, Statistics, and Computer Science with over 20 years' experience as Head of the Department of mathematics, Director of the Systems Analysis & Mathematics Laboratory, Researcher & Consultant with the Canadian SNC-Lavalin Group and World-Bank-sponsored programs, Instructor in regional statistics & applied economics schools. Developer of a statistical software called VisualStat ([www.visualstat.com](http://www.visualstat.com))

## SUMMARY OF CORE COMPETENCIES

### ❑ Computer Skills

*Superior skills and extensive experience in the following areas:*

- Visual Studio .NET, Fortran 90
- SQL, ODBC, MySQL
- Macromedia Flash animation
- Java, PHP, CGI
- CorelDraw
- Maple V, Mathematica
- SPSS, SPlus, SAS, R, Stat Graphics
- PC Compatible (Power User), Sun Station
- Word, Excel, Access, Lotus, Dbase,
- .NET & ActiveX Components (OCX, DLL,)

### ❑ Mathematics & Statistics

*World-class expertise and publications in the following areas:*

- Fuzzy Logic
- Multivariate Data Analysis
- Multi-criteria Decision Making
- Operations Research
- Survey Sampling
- Regression Modeling
- Analysis of Survival Data
- Design of Experiments, ANOVA
- Time Series and Forecasting
- Statistical Quality Control
- Mathematical Methods with Fuzzy Data
- Database Management
- Analysis of Complex Survey Data
- Categorical Data Analysis

### ❑ Industry-Specific Research Experience

*Internationally recognized achievements and publications in the following industries:*

- Transport Economics
- Health Economics

## EDUCATION

- **« Doctorat d'État » in Mathematics (1998)**  
*University of Yaounde I, Cameroon; University of Lyon I, France*
- **« Certificat Supérieur » in Transport Economics (1996)**  
*Transport Economics Laboratory, University of Lyon II, France*
- **« Doctorat de 3ème Cycle » in Statistics (1986)**  
*University of Paris 6, France*
- **Master of Sciences in Mathematics (1983)**  
*University of Paris 7, France*
- **Bachelor in Mathematics(1981)**  
*University of Paris 7, France*

## PROFESSIONAL CAREER

### ❖ Professional Activities

#### ☐ Professional Activities

- **Expert-Consultant** (Since 2009)  
*RINA Industry S.p.A, Genova, Italy*
- **Expert-Consultant** (Since 2007)  
*SYSTRA SA, Paris, France*
- **Expert-Consultant** (Since 2007)  
*IDC-NODALIS, Paris, France*
- **Department Head**, (Since 2004)  
*National Polytechnic Institute  
The University of Yaounde I, Cameroon*
- **Member**, (Since 2004)  
*Scientific Committee  
National Polytechnic Institute  
The University of Yaounde I, Cameroon*
- **M. Sc. in Statistics**, (Since 2004)  
*Manager  
National Polytechnic Institute  
The University of Yaounde I, Cameroon*
- **Expert-Consultant** (Since 2003)  
*EGIS Group, Paris, France*

### ❖ Other Positions Held

- **Instructor** (Since 2003)  
*Central Africa Catholic University  
Yaounde, Cameroon*
- **Professor** (Since 2002)  
*National Polytechnic Institute  
The University of Yaounde I, Cameroon*
- **Expert-Consultant** (Since 1998)  
*SNC-Lavalin Group, Montreal, Canada*
- **Instructor** (Since 1997)  
*Regional Statistics & Applied Economics  
School, Yaounde, Cameroon*
- **Instructor** (Since 1996)  
*International Insurance Institute,  
Yaounde, Cameroon*
- **Founding Member** (1996)  
*International Solidarity on Transport in  
Sub-Saharan Africa (SITRASS)*
- **Associate Professor** (Since 1989)  
*National Polytechnic Institute  
The University of Yaounde I, Cameroon*

#### ☐ Other Positions Held

- **Director** (Since 1999)  
*Systems Analysis & Mathematics Laboratory (LAMAS)  
National Polytechnic Institute, The University of Yaounde I*  
This multi-disciplinary research laboratory conducts research seminars monthly. In these meetings, professors, researchers and students present research works and papers. Every year, the LAMAS receive a guest speaker, generally from a university in Western Europe.
- **Chairman** (Since 1996)  
*Alumni Employment Observatory  
National Polytechnic Institute, The University of Yaounde I, Cameroon*
- **Department Head, Statistics & Planning** (1991-1999)  
*The University of Yaounde I, Cameroon*

## TEACHING AND TRAINING EXPERIENCE

- ❖ Engineering Training
- ❖ Graduate Programs
- ❖ Other Training

### ❑ Engineering Training

*National Polytechnic Institute, The University of Yaounde I, Cameroon*

- Have been teaching the following **post-graduate courses: Fuzzy Logic, Operations Research, and Multivariate Data Analysis** (Since 1992)
- Taught mathematical analysis, geometry, and linear algebra (1987-1992)

### ❑ Graduate Programs

*National Polytechnic Institute, The University of Yaounde I, Cameroon*

- **Supervise Master's & Doctoral theses** in Applied Statistics (Since 2004)
- Have been **directing the « Mathematics & Systems Analysis » graduate program** (Since 1999)
- **Direct Master's Degree theses for Computer Systems Engineering students** (Since 1995)
- **Taught Statistics in the "Applied Statistics in Social Sciences" graduate program** (1993-1999)
- Teach in several other post-graduate programs

### ❑ Other Training

- Teach and supervise students at the Regional Statistics & Applied Economics School, Yaounde, Cameroon, and direct diploma theses
- Intervene on an ad-hoc basis at the International Insurance Institute, Yaounde, Cameroon

## SOFTWARE & APPLICATIONS DEVELOPMENT

### ❑ Development of VisualStat – a Statistical Package

*VisualStat is a data-analysis software that can perform from basic data manipulations to the most advanced statistical analyses, thus allowing non-statisticians and experienced statisticians to conduct rigorous studies and produce sophisticated reports and charts:*

- **Linear Regression** allows you to examine the relationship between a dependent variable and a set of independent variables. You can see how well the regression model fits your data by examining the residuals and other types of diagnostics that this procedure provides
- Manipulate **large tables**, whose sizes are **limited only by the central memory of your computer**
- VisualStat has its own **native format**, can **import and export files** of various formats, including Microsoft Excel®. You can also input data directly into the Data Editor.
- **Highlight an entire Excel spreadsheet**, paste it onto VisualStat's spreadsheet, and start analyzing.
- **Curve Estimation** fits various types of mathematical functions to data. For example, you can use Curve Estimation to easily fit linear, exponential, logarithmic, and growth models. Based on these results you can see which of the models is adequate to summarize your data.
- Incorporate **formulas directly in table cells** through a high-performance **Generator of Variables** that has over 100 statistical, financial, logical, and other functions.
- **Bivariate Correlations** calculates matrices of Pearson product-moment correlations, and of Kendall and Spearman nonparametric correlations, with significance levels and optional univariate statistics.
- Select/check analysis variables, which appear in a dialog box with a multiple selection option.
- Using Multivariate Techniques like Principal Components Analysis, Agglomerative Hierarchical Clustering ... is now easy with VisualStat.
- Transform variables by using the **Programming Module**.
- Select menu-driven procedures to compute statistics or create charts.
- View the results of any procedure in the **Report Window**. The Procedures **Report** offers the **functionality of the standard Rich Text Format (RTF)**, thus allowing the introduction of images and results from other applications.
- Select any portion of your chart and **zoom it up** for a better visualization.

*For a detailed description, examples of statistical analyses, chart creation & editing, sample field case studies and downloads, visit <http://www.visualstat.com/>*

### ❑ .Net Components & Source Codes

*Completion of the following projects will solve the specified problems:*

- .Net Components  
*A user can create applications in any language, say Visual Basic® or SAS®, and be willing to open databases or charts created by VisualStat. Net Components will do the job; so will specific source codes.*
- .Net Components vs. Java Applets  
*.Net Components will allow the testing and execution of VisualStat and my other software via the Internet under Windows. This interaction will open ways to powerful e-commerce applications in a Windows environment.*
- .Net Components and Popular Applications (MS Excel® or MS Access®, for e.g.)  
*Planting these .Net Components directly, say in MS Excel®, will combine Excel functionality with powerful VisualStat features; the user would use spreadsheet data or VisualStat data, transform them with VisualStat, get results and create charts without ever opening the VisualStat software.*

## KEY RESEARCH AREAS

- ❖ Transport Economics
- ❖ Mathematical Methods for Analyzing Fuzzy Data
- ❖ Health Economics

### ☐ Transport Economics

- Funded by the French Cooperation with the support of the **World Bank**, research in this area is conducted in cooperation with the National Institute for Research on Transport & Security (Paris, France), the Transport Economics Laboratory (Lyon, France), and the International Solidarity on Transport in Sub-Saharan Africa. In 1986, the World Bank launched the **Sub-Saharan African Transport Program**, which initiated several research activities.
- For **research projects**, report to the "**Research Activities**" section.

### ☐ Mathematical Methods for Analyzing Fuzzy Data

- Research I conducted in **Transport Economics** showed that in determining trucking price indicators, **classical mathematical methods** do not always yield good results. The main reason for this is that the information collected for these studies is, for the most part, poorly defined or vague.
- In 1993, these findings made me launch a massive research program aimed at building new mathematical and computing tools for the assessment of poorly defined information or fuzzy intelligence. This research culminated to the defense of a **Doctorate in Mathematics** in February 1998 (see the "**Recent Publications & Other Works**" section).
- Since then, most of my research activities have geared towards the development of new evaluation and decision-support methods in the science of the uncertain.

### ☐ Health Economics

- For fifteen years I have had an interest for mathematics tools in the health sector and resumed research in **Health Economics and Communal Health** a few years ago.
- I focus on **mathematical methods for analyzing healthcare systems**. In this framework, research evaluates healthcare strategies in a universe of uncertain or poorly defined circumstances.

## RESEARCH ACTIVITIES

- ❖ Research Projects
- ❖ Overseas Research Trips

### ☐ Research Projects

- **2004 –**  
**Master of Sciences in Statistics and Graduate School for French speaking countries**  
*Financing:* Europe Union (EDULINK),  
 Association of French Language Universities (AUF)  
*Manager:* Henri GWÉT, Elisabeth Gassiat (University Paris 11)
- **2001**  
**Teaching Statistics with Internet: the St@net project**  
*Financing:* Association of French Language Universities (AUF)  
 Inter-University Cooperation Fund (IUCF) Program  
*Manager:* Henri GWÉT
- **2000**  
**Assessment of Cameroon Food Products' Distribution Channels in Central Africa**  
*Financing:* Association of French Language Universities (AUF)  
*Manager:* Henri GWÉT
- **1998**  
**Fuzzy Indicators for Assessing the Transport of Food Products**  
*Financing:* Association of French Language Universities (AUF)  
*Impact:* A better understanding of food products' transport and distribution channels  
 is likely to secure new markets at profitable prices in emerging economies  
*Manager:* Henri GWÉT
- **1995**  
**Transport Networks & Competitiveness**  
*Financing:* World Bank: Sub-Saharan African Transport Program (SSATP)  
*Manager:* Henri GWÉT

### ☐ Overseas Research Trips

*To carry out various research activities, we were asked to perform a number of research stays abroad. Several of these trips have been a call for nominations, followed by a discussion by a panel of international experts, before receiving funding from an international.*

- **March 2009**  
**Graduate School of Applied Statistics for Africa**  
*Organization:* National Polytechnic Institute (Ivory Coast)  
*Financing:* EU-EDULINK
- **September 2008**  
**Graduate School of Applied Statistics for Africa**  
*Organization:* University of Paris 11 (France)  
*Financing:* French Cooperation
- **May 2006**  
**Graduate School of Applied Statistics for Africa**  
*Organization:* University of Paris 11 (France)  
*Financing:* French Cooperation

- **August 2005**  
**Summer School of Mathematical Statistics and Health Statistics**  
*Organization: University of Paris 11 (Orsay)*  
*Financing: University of Paris 11 (Orsay)*
- **December 2003**  
**Graduate School of Applied Statistics for Africa**  
*Organization: University of Paris 11 (Orsay)*  
*Financing: University of Paris 11 (Orsay)*
- **October 2001**  
**Statistical models for analyzing the costs of trucking**  
*Organization: National Institute for Research on Transport & Security (NIRTS), France*  
*Department of Economics and Transport Sociology (DETS)*  
*Financing: Association of French Language Universities (AUF)*
- **March 1999 – August 1999**  
**Building New Indicators ~ Developing Fuzzy Statistics Software ~ Fuzzy Utility**  
*Organization: Claude-Bernard University - Associated Scientific Enterprise 5047*  
*Health Systems Analysis Laboratory, France*  
*Financing: French Cooperation – Cameroon Universities in Year 2000 (French Organization)*
- **October 1996**  
**Trucking Prices in Africa, Asia, and Central America. A Comparative Approach**  
*Organization: National Institute for Research on Transport & Security (NIRTS), France*  
*Department of Economics and Transport Sociology (DETS)*  
*Financing: International Solidarity on Transport in Sub-Saharan Africa (ISTSSA)*
- **September 1996**  
**International Trucking Prices and Costs**  
*Organization: The University of Lyon II*  
*Transport Economics Laboratory (TEL), Lyon, France*  
*Financing: International Solidarity on Transport in Sub-Saharan Africa (ISTSSA)*
- **March – August 1995, March – August 1994, and September – December 1993**  
**Mathematical and Computing Tools for Assessing Fuzzy Intelligence**  
*Organization: Claude-Bernard University - Associated Scientific Enterprise 5047*  
*Health Systems Analysis Laboratory, France*  
*Financing: French Ministry of Foreign Affairs – University Cooperation Program*
- **December 1993**  
**Analysis under Constraints**  
*Organization: The University of Montpellier II, Montpellier, France*  
*Financing: French Ministry of Foreign Affairs – University Cooperation Program*

## RECENT PUBLICATIONS & OTHER WORKS

- Maths
- *Fuzzy Extension of Some Notions of Classical Theory of Partial Orders*  
Submitted in Fuzzy Sets and Systems
  - *A Binary Intuitionist Fuzzy Relation: Some New Results, a General Factorization, and Two Properties of Strict Components*, International Journal of Mathematics and Mathematical Sciences, **2009**, 15 June 2009, Article ID 580918, 38 pages  
[doi 10.1155/2009/580918](https://doi.org/10.1155/2009/580918)
  - *On strict lower and upper sections of weakly complete fuzzy pre-orders based on co-implication*, Fuzzy Sets and Systems, **159**, 17, 1 September 2008, pp 2240-2255  
[doi 10.1016/j.fss.2008.02.018](https://doi.org/10.1016/j.fss.2008.02.018)
  - *Fuzzy Implications operators for fuzzy set differences operations and cardinality-based measures of comparison.*  
European Journal of Operational Research, **183**, 2007, pp. 314-326  
[io-port 05166872](https://doi.org/10.1016/j.ejor.2007.05.018)
  - *On strict lower and upper sections of fuzzy orderings*  
Fuzzy Sets and Systems, **139**, Issue 3, 1 November 2003, pp 583-599  
[io-port 02013086](https://doi.org/10.1016/j.fss.2003.11.018)
  - *Fuzzy Indicators and Multi-criteria Evaluation*  
Journal of Fuzzy Mathematics, **10**, Part 2, 2002, pp. 303-320  
[io-port 01874120](https://doi.org/10.1016/j.fss.2002.02.018)
  - *Generalized Tchebychev Distance and Fuzzy Statistical Description*  
African Journal of Pure and Applied Mathematics, **3**, 2000, pp. 43-75  
[io-port 01791690](https://doi.org/10.1016/j.fss.2000.03.018)
  - *Normalized Conditional Possibility Distribution and Informational Connection between Fuzzy Variable*, International Journal of Uncertainty, Fuzziness and Knowledge-Based System, **5**, 2, 1997, pp.177-198  
[doi 10.1142/S0218488597000154](https://doi.org/10.1142/S0218488597000154)
- Transport
- *Indicateur Flou et Évaluation d'un Système de Transport*, in Logique Floue et Application, Actes des 10ème Rencontres Francophones sur la Logique Floue et ses Applications (LFA02), Montpellier, 2002, pp. 291-296, ISBN 2-85428-600-6
  - *Indicateur d'Efficacité d'un Système de Transport*, Communication au 6ème Séminaire du SITRASS, Bamako, Mali, 5-7 novembre 2001
  - *Dissimilarity between Fuzzy Sets. An Application to Transport Economics*  
Journal of Fuzzy Mathematics, **9**, Part 3, 2001, pp. 716-732  
[io-port 01736357](https://doi.org/10.1016/j.fss.2001.03.018)
  - *Les surcoûts du camionnage en Afrique après la dévaluation du franc CFA*  
Cahiers Scientifiques du Transport, **38**, 2000, pp. 3-18  
<http://afitl.ish-lyon.cnrs.fr/cst/precedents-numeros/n38/rizet38.pdf>

- *Évaluation du transport et de l'écoulement des produits vivriers camerounais sur le marché de la CEMAC*, Étude réalisée sur financement de l'Agence Universitaire de la Francophonie - FICU n° 98/PAS/6, 1999
- *Une comparaison internationale des prix du camionnage ; Afrique, Asie du Sud-est, Amérique centrale*, Recherche - Transports - Sécurités, **60**, 1998, pp. 68-88
- *Chaînes de transport au Cameroun*, Rapport de synthèse, INRETS-LET
- *Prix et Coûts du Camionnage au Cameroun*, Actes du Séminaire SITRASS, Octobre 1996, Brazzaville, INRETS (Institut National de Recherche sur les Transports et leur Sécurité), pp. 261-277  
<http://halshs.archives-ouvertes.fr/halshs-00276654/fr/>
- *Évolution des prix et coûts du camionnage en Afrique*, Communication, Séminaire SITRASS, Brazzaville

## Health

- *Efficacy of non-artemisinin based and artemisinin-based combination therapies for uncomplicated falciparum malaria in Cameroon*, Submitted in "Malaria Journal"
- *Analysis of an ordinal outcome in a multicentric randomized controlled trial: application to a 3- arm anti- malarial drug trial in Cameroon*, Submitted in "Statistics in Medicine"
- *Analyse de réponses catégorielles dans les essais cliniques randomisés : application aux données d'un essai thérapeutique pédiatrique d'antipaludiques au Cameroun* *Revue d'Épidémiologie et de Santé Publique*, **57**, 1, mai 2009, p. S11
- *Fuzzy Utility and Non-Cardinal Representation of Preferences* *Health and System Science*, **4**, 2000, pp. 117-132  
[bdsp 235927](#)
- *Fuzzy Questionnaire and Differential Analysis, an Application in Pediatrics* *Health and System Science* **1**, 1, 1997, pp. 39-55

## Misc

- *A new and general formula of the Human Development Index using fuzzy set theory*. Technical Paper, 2000
- *Fuzzy Indicators and Fuzzy Split, with economic application* Technical Paper, 2000
- *Étude sur l'Observatoire de l'Emploi des Diplômés de l'Ecole Polytechnique*. Rapport de synthèse pour le compte du SCAC, 1998