Laurent BERNAILLE

UPMC – Paris VI, LIP6/CNRS, Paris, France
French Citizen, 26 years old
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Ph.D Student in Computer Science
Statistical methods for application classification

RESEARCH INTEREST

Computer networking with emphasis on measurement and analysis of IP networks.

EDUCATION

- **Ph.D Student at LIP6** 2003-2007
  Topic: Statistical methods for application classification
  Université Pierre et Marie Curie (Paris VI), France
  - Advisors: E. Horlait, R. Texeira
- **M.Sc in Computer Networks & Telecoms (DEA)** 2002-2003
  - Université Pierre et Marie Curie (Paris VI), France
  - Pass with Honors, **Ranked first**.
- **M.Sc in Computer Science (Diplôme d'ingénieur)** 1998-2001
  - Institut National des Télécommunications (INT, Evry), France
  - Last year specialty: network-based programming and web development
- **B.A. in English Literature (Licence)** 1998-2001
  - Université Sorbonne Nouvelle (PARIS III),, France

LANGUAGES

- **French:** Native
- **English:** Fluent (Cambridge Certificate of Advanced English, 18 month internship in the US)

RESEARCH PROJECTS / WORK EXPERIENCE

- **Classification of TCP traffic** 2003-2006
  Development of statistical methods to classify TCP traffic based on the sizes of the first packet in the connection. Extension to the classification of encrypted traffic.
- **Metroplis and Metrosec Project** 2003-2005
  The goal of the Metropolis project was to measure and analyze newtowrk performances The major goal of the Metrosec project is to increase robustness and insensitivity of the network with respect to ruptures in traffic characteristics and topology, so that the network continues to deliver an acceptable level of services and the requested QoS.
- **M.Sc Project: LIP6 – State of the art in Network Processors** 2003
  Analysis of capabilities of network processors and current technologies
- **Development of e-business activities at Rhodia.inc** 2001-2002
  Development and integration of collaborative web-based software for project management
  Integration of results on monomer and polymer synthesis from different research labs in a common database, and development of web interfaces to search and maintain it.
  Technical project manager on Virtual Advisor. This project was developed to automatically answer users' queries and provide electronic advices and suggestions using case-based reasoning.

PUBLICATIONS

- **Early Application Identification**
  Laurent Bernaille, Renata Teixeira and Kavé Salamatian
  Conference on Future Networking Technologies - December 2006, Lisboa Portugal (12p)
- **Distribution of traffic among applications as measured in the French Metropolis project**
  Philippe Owezarski, Nicolas Larrieu, Laurent Bernaille, Walid Saddi, Fabrice Guillemin, Augustin Soule and Kavé Salamatian
  Annals of Telecommunications Special issue on Analysis of traffic and usage traces on the Internet - December 2006 (17p)
- **Détection d'attaques de déni de service par un modèle non gaussien multirésolution**
  Pierre Borgnat, Nicolas Larrieu, Philippe Owezarski, Patrice Abry, Julien Aussibal, Laurent Gallon, Guillaume Dewaele, Karima Boudaoud, Laurent Bernaille, Antoine Sherrer, Yu Zhang and Yann Labit
  Colloque Francophone d'Ingénierie des Protocoles (CFIP), Tozeur - October, 2006 (12p)
- **Traffic Classification on the fly**
  Laurent Bernaille, Renata Teixeira, Ismael Akodjenou, Augustin Soule and Kavé Salamatian
  ACM SIGCOMM Computer Communication Review, Vol. 36, Issue 2 (5p)

TECHNICAL SKILLS

- **Machine Learning:** K-Means, Hidden Markov Models, Gaussian Mixture Models
- **Programming:** C, Perl, Libpcap, Shell, Java, Matlab
- **Databases:** MySql, Oracle
- **Networking:** Ethernet, TCP/IP, SSL, Routing, DNS
- **Web:** HTML, PHP, ASP, XML, CSS, AJAX
- **System Administration:** UNIXes, MAC OS X, Windows

PROFESSIONAL ACTIVITIES

- **Organization chair**
  Participation to the organization of **INTIMATE 2006**
- **Reviewer**
  PAM 2006

TEACHING

- **Université Pierre et Marie Curie (Paris, France), 2003-2007**
  - Teacher assistant at under-graduate level
    - Imperative Programming: 192 hours
    - Introduction to networks: 40 hours
  - Teacher assistant at graduate level
    - Programming of Network Processors: 32 hours

CURRENT SUBMISSIONS

- **Early Recognition of Encrypted Applications**
  Laurent Bernaille and Renata Teixeira
  Submitted to PAM 2007

REFERENCES

Renata Teixeira, Serge Fdida
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