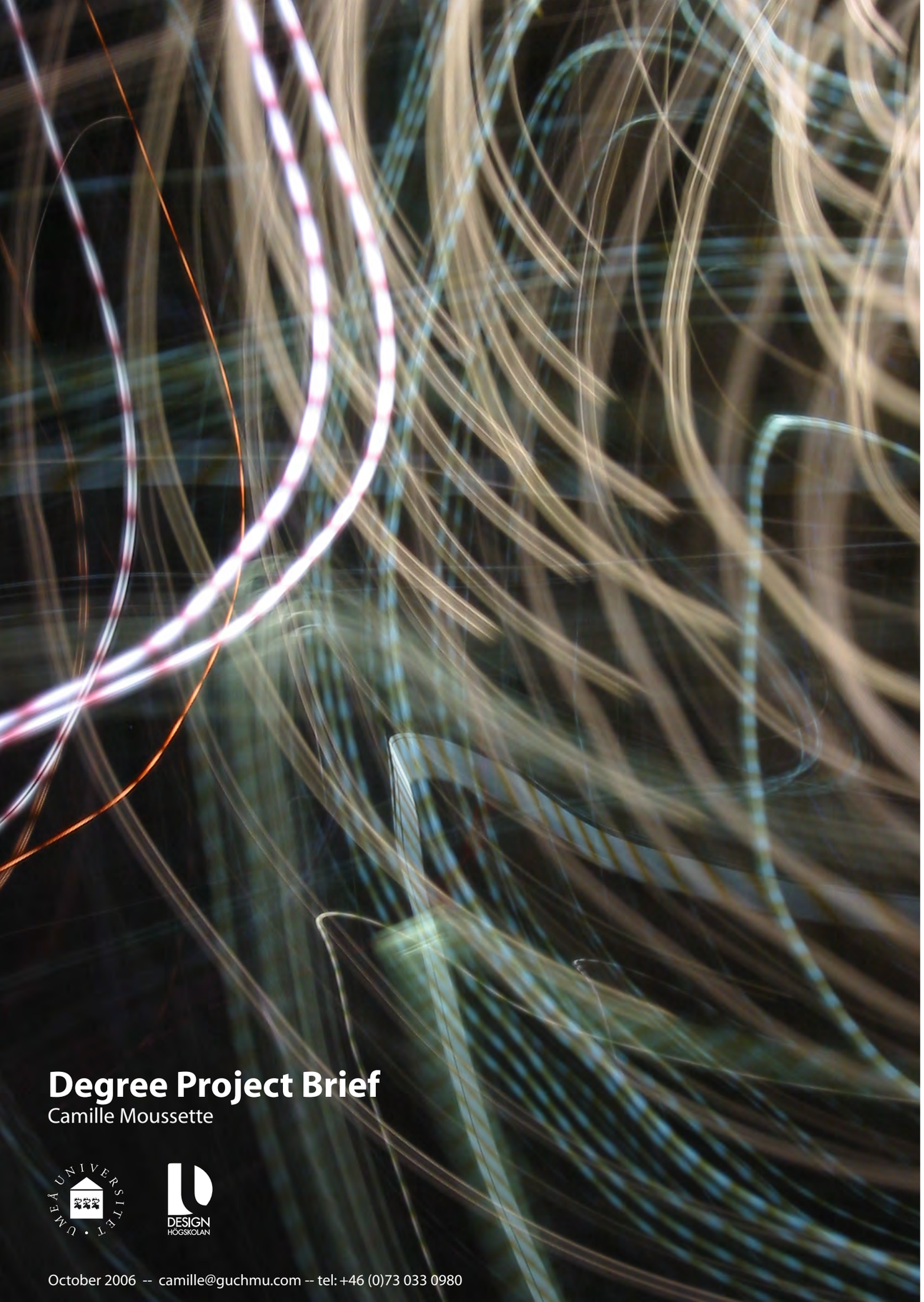

Degree Project Brief

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"Man is nothing but a bundle of sensations"
(Protagoras, 450 B.C.)

Development of new sensorial interaction techniques for mobile devices.

How would it be without our five senses? What kind of world we would evolve in? How could we interact with our environment and our peers? Our sensorial system is our interface to the world. It is trough and with our senses that we can perceive, reason and exchange with external systems, living or not.

Our professional and personal activities are made of rich and complex sensorial experiences, spanning on different stimulus and modalities. Historically, our various systems and tools have heavily relied on the sound and visual channels. New mobile devices also focus almost exclusively on these same channels. Despite decades of technological refinements, little progress has been made over the way we directly interact with such devices. The repertoire of input and output forms is usually limited to the traditional buttons-display paradigm. The technical constraints associated with handheld and mobile systems are strong. My previous research and other authors point that new mobile interaction techniques are possible and could exploit and embrace users' capabilities for richer, more intuitive and enjoyable experiences.

I would like to undertake my degree project with the exploration and development of new sensorial interaction techniques for mobile devices based on the touch sense: haptic and gestural interfaces, simulated tactile feedback, etc.

Methodology and goals

Exploration phase:

-Observe, document and analyze the way humans naturally use the touch sense with mobile devices.
-Read and research about the touch sense: its capabilities, limitation, sensitivity, bandwidth, etc.
-Review new techniques, technologies and materials that could be appropriate for new sensorial interfaces.

Design phase:

-Conduct participatory design activities to involve the users with the design of new touch-based interaction.
-Build low and high fidelity prototypes to test and evaluate new touch-based interface systems.

Communication

I plan to have a website/blog dedicated to this project. I will use it to track and document my work, and hopefully to share and get feedback from external collaborators and tutors.

For this Interaction Design degree project, I would like to end up in May 2006 with working prototypes that depict multiples (ideally three or more) new and novel touch-based interaction techniques for mobile devices. I hope to present the process, development and evaluation aspects of these new interaction techniques or interfaces.

Possible sponsors/tutors

Sony Ericsson Mobile Communications, Lund (contact: Kristoffer Åberg)
Nokia Research, Los Angeles (contact: Mike Kruzeniski)
Microsoft Research, Seattle (contact: Adriana Moscatelli)
Immersion (contact: Dr. Christophe Ramstein)
Motorola
Samsung
Research in Motion - Blackberry
3M

Timetable (preliminary)

Exploration
Research
Visits
Meeting collaborators
Documentation
Ideation

Participatory design
Hardware sketching
Experience prototyping
Documentation
Use scenarios

Evaluation of solutions
Solutions iterations and refinements
Ongoing development

Writing report
Building final prototypes
Planning of the final presentation

Presentation work
Exhibition work
Communication refinements

January	February	March	April	May	June
12 Email project name and partner **17** 5 min oral presentation at UID		**13** Half-way verbal progress report	**24** 3 weeks before presentation	**7** Report submission (3 copies) **14** Examination presentation **21** Preparation of exhibition material **31** Final submission of report + DVD	**1** Opening of the Degree Exhibition

Budget (preliminary)

UID degree show fees	10 000
Hardware devices and sensors	5 000
Video materials	5 000
Printing costs	3 000
Building materials	2 000
Communications	1 000
Attendance to conference	12 000
Collaborator/tutor visit	12 000
Total	50 000 SEK (~ 7 000 USD)

Attendance to a conference

I would like to attend an academic conference during this project. I think such activities can be very beneficial to a term project because they offer opportunities to share, explore, discuss and reflect on the field of study, its present situation and future directions. I personally think it is a good situation to have a break half way, to avoid being carried away too deeply with the subject and to enjoy life while exploring different perspectives.

Suggestions:

TANGIBLE AND EMBEDDED INTERACTION 2007
15-17 February 2007, Baton Rouge, Louisiana, USA
http://tei-conf.org

CHI 2007
28 April - 3 May 2007, San Jose, California, USA
http://www.chi2007.org

Collaborator/tutor visit

Over the last year and a half, my design and study activities mainly resolved around UID and its academic settings. I would like to take the opportunity with this degree project to explore and visit a more industry-oriented environment where interaction design activities are pursued. If possible, I would like to plan and organize a visit to my collaborator's work or research facilities to get inspired and learn more about their ongoing work and research.

Ultimately, it would be best if I could combine both the conference and visit in one trip. Time and travel expenses could be minimized accordingly.