

**THE SEAMLESS LOCALIZATION SYSTEM BASED ON AN  
INDOOR-OUTDOOR CONDITIONS USING RECEIVED  
SIGNAL STRENGTH FOR UBIQUITOUS COMPUTING  
ENVIRONMENTS**

**Dissertation**

Doctoral Degree Program  
Information Technology  
Department of Electrical and Information Engineering



**Submitted by:**  
**Khamla NonAlinsavath**  
**17/421333/STK/00672**

**INFORMATION TECHNOLOGY DOCTORAL PROGRAM  
DEPARTMENT OF ELECTRICAL AND INFORMATION  
ENGINEERING  
FACULTY OF ENGINEERING  
UNIVERSITAS GADJAH MADA  
January 2021**