

## Undergraduate Unofficial Transcript

Name: Wang, Houze  
Student ID: 20523903  
Ontario Education Nbr: 522430370

### Degrees Awarded

Degree: Bachelor of Mathematics  
Confer Date: 06/15/2018  
Degree Honours: With Distinction  
Degree Honours: Dean's Honours List  
Computer Science, Honours, Co-operative Program  
Combinatorics & Optimization, Honours, Co-operative Program  
Cognitive Science Minor

### Beginning of Undergraduate Record

#### Fall 2013

Program: Software Engineering, Honours, Co-operative Program  
Level: 1A Load: Full-Time Form Of Study: Enrolment

Course		Description	Attempted	Earned	Grade
CS	137	Programming Principles	0.50	0.50	90
ECE	105	Physics of Electrical Engineering 1	0.50	0.50	81
ECE	140	Linear Circuits	0.50	0.50	77
MATH	115	Linear Algebra for Engineering	0.50	0.50	91
MATH	117	Calculus 1 for Engineering	0.50	0.50	86
SE	101	Introduction to Methods of Software Engineering	0.25	0.25	90

		<u>In GPA</u>	<u>Earned</u>
Term GPA	85.46	Term Totals	2.75
Cumulative GPA	85.46	Cumulative Totals	2.75

Academic Standing: Excellent standing Effective 12/31/2013  
MATH 117=MATH 137, CS137=CS 135, MATH 115 = MATH 136

#### Winter 2014

Program: Software Engineering, Honours, Co-operative Program  
Level: 1B Load: Full-Time Form Of Study: Enrolment

Course		Description	Attempted	Earned	Grade
CS	138	Introduction to Data Abstraction and Implementation	0.50	0.50	75
ECE	106	Physics of Electrical Engineering 2	0.50	0.50	69
ECE	124	Digital Circuits and Systems	0.50	0.50	67
MATH	119	Calculus 2 for Engineering	0.50	0.50	62
MATH	135	Algebra for Honours Mathematics	0.50	0.50	83

		<u>In GPA</u>	<u>Earned</u>
Term GPA	71.20	Term Totals	2.50
Cumulative GPA	78.67	Cumulative Totals	5.25

Academic Standing: Good standing Effective 04/30/2014  
MATH 119=MATH 138, CS138=CS 136

#### Spring 2014

Program: Software Engineering, Honours, Co-operative Program  
Level: 1B Load: Part-Time Form Of Study: Co-op WorkTerm

Course		Description	Attempted	Earned	Grade
COOP	1	Co-operative Work Term	0.50	0.00	CR
PD	20	Engineering Workplace Skills I: Developing Reasoned Conclusions	0.50	0.00	CR

		<u>In GPA</u>	<u>Earned</u>
Term GPA	0.00	Term Totals	1.00
Cumulative GPA	78.67	Cumulative Totals	5.25

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### Fall 2014

Program: Software Engineering, Honours, Co-operative Program  
Level: 2A Load: Full-Time Form Of Study: Enrolment

<u>Course</u>		<u>Description</u>	<u>Attempted</u>	<u>Earned</u>	<u>Grade</u>
CHE	102	Chemistry for Engineers	0.50	0.50	90
CS	241	Foundations of Sequential Programs	0.50	0.50	85
ECE	222	Digital Computers	0.50	0.50	75
PHIL	256	Introduction to Cognitive Science	0.50	0.50	85
SE	212	Logic and Computation	0.50	0.50	88
STAT	206	Statistics for Software Engineering	0.50	0.50	90
			<u>In GPA</u>	<u>Earned</u>	
Term GPA	85.50	Term Totals	3.00	3.00	
Cumulative GPA	81.15	Cumulative Totals	8.25	8.25	

Academic Standing: Excellent standing Effective 12/31/2014  
*ECE 222=CS 251, STAT 206=STAT 231, SE 212=CS 245*

### Winter 2015

Program: Software Engineering, Honours, Co-operative Program  
Level: 2A Load: Part-Time Form Of Study: Co-op WorkTerm

<u>Course</u>		<u>Description</u>	<u>Attempted</u>	<u>Earned</u>	<u>Grade</u>
COOP	2	Co-operative Work Term	0.50	0.00	CR
PD	21	Engineering Workplace Skills II: Developing Effective Plans	0.50	0.00	CR
			<u>In GPA</u>	<u>Earned</u>	
Term GPA	0.00	Term Totals	1.00	0.00	
Cumulative GPA	81.15	Cumulative Totals	8.25	8.25	

### Spring 2015

Program: Software Engineering, Honours, Co-operative Program  
Level: 2B Load: Full-Time Form Of Study: Enrolment

<u>Course</u>		<u>Description</u>	<u>Attempted</u>	<u>Earned</u>	<u>Grade</u>
CS	240	Data Structures and Data Management	0.50	0.50	90
CS	247	Software Engineering Principles	0.50	0.50	84
MATH	213	Advanced Mathematics for Software Engineers	0.50	0.50	87
MATH	239	Introduction to Combinatorics	0.50	0.50	87
MSCI	261	Engineering Economics: Financial Management for Engineers	0.50	0.50	79
PHYS	234	Quantum Physics 1	0.50	0.50	83
WKRPT	200	Work-term Report	0.13	0.00	75
			<u>In GPA</u>	<u>Earned</u>	
Term GPA	85.00	Term Totals	3.13	3.00	
Cumulative GPA	82.18	Cumulative Totals	11.25	11.25	

Academic Standing: Excellent standing Effective 08/31/2015  
*MATH 213=AMATH 250, CS 247=CS 246*

### Fall 2015

Program: Software Engineering, Honours, Co-operative Program  
Level: 2B Load: Part-Time Form Of Study: Co-op WorkTerm

<u>Course</u>		<u>Description</u>	<u>Attempted</u>	<u>Earned</u>	<u>Grade</u>
COOP	3	Co-operative Work Term	0.50	0.00	CR
PD	10	Professional Responsibility in Computing	0.50	0.00	CR
PSYCH	101	Introductory Psychology	0.50	0.50	92
			<u>In GPA</u>	<u>Earned</u>	
Term GPA	92.00	Term Totals	1.50	0.50	
Cumulative GPA	82.60	Cumulative Totals	11.75	11.75	

Academic Standing: Decision not applicable Effective 01/05/2016

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### Winter 2016

Program: Software Engineering, Honours, Co-operative Program  
Level: 3A Load: Full-Time Form Of Study: Enrolment

<u>Course</u>		<u>Description</u>	<u>Attempted</u>	<u>Earned</u>	<u>Grade</u>
CS	341	Algorithms	0.50	0.50	97
CS	370	Numerical Computation	0.50	0.50	97
MATH	247	Calculus 3 (Advanced Level)	0.50	0.50	87
PHYS	263	Classical Mechanics and Special Relativity	0.50	0.50	95
SE	350	Operating Systems	0.50	0.50	94
STAT	230	Probability	0.50	0.50	95

			<u>In GPA</u>	<u>Earned</u>	
Term GPA	94.17	Term Totals	3.00	3.00	
Cumulative GPA	84.95	Cumulative Totals	14.75	14.75	

Academic Standing: Excellent standing Effective 04/30/2016

Admitted with excellent standing to the Bachelor of Computer Science, Co-operative Program in the Faculty of Mathematics effective fall 2016 term. SE 350=CS350.

SE 101+WT1=PD1, PD20+WRPT 2=PD2, PD21=PDx, PD10.

Term Honours: Term Dean's Honours List

### Spring 2016

Program: Software Engineering, Honours, Co-operative Program  
Level: 3A Load: Part-Time Form Of Study: Co-op WorkTerm

<u>Course</u>		<u>Description</u>	<u>Attempted</u>	<u>Earned</u>	<u>Grade</u>
COOP	4	Co-operative Work Term	0.50	0.00	CR
MATH	235	Linear Algebra 2 for Honours Mathematics	0.50	0.50	98
PD	7	Conflict Resolution	0.50	0.00	CR
WKRPRT	200M	Work-term Report	0.13	0.00	75

			<u>In GPA</u>	<u>Earned</u>	
Term GPA	98.00	Term Totals	1.63	0.50	
Cumulative GPA	85.38	Cumulative Totals	15.25	15.25	

Academic Standing: Decision not applicable Effective 09/01/2016

### Fall 2016

Program: Computer Science, Honours, Co-operative Program  
Level: 4A Load: Full-Time Form Of Study: Enrolment

<u>Course</u>		<u>Description</u>	<u>Attempted</u>	<u>Earned</u>	<u>Grade</u>
CO	250	Introduction to Optimization	0.50	0.50	96
CO	456	Introduction to Game Theory	0.50	0.50	100
CS	343	Concurrent and Parallel Programming	0.50	0.50	84
CS	360	Introduction to the Theory of Computing	0.50	0.50	95
CS	486	Introduction to Artificial Intelligence	0.50	0.50	99
PMATH	336	Introduction to Group Theory with Applications	0.50	0.50	98

			<u>In GPA</u>	<u>Earned</u>	
Term GPA	95.33	Term Totals	3.00	3.00	
Cumulative GPA	87.01	Cumulative Totals	18.25	18.25	

Major Average: 87.91 Computer Science, Honours, Co-operative Program

Faculty Average: 88.92 Computer Science, Honours, Co-operative Program

Academic Standing: Excellent standing Effective 12/31/2016

Term Honours: Term Dean's Honours List

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### Winter 2017

Program: Computer Science, Honours, Co-operative Program  
Level: 4B Load: Part-Time Form Of Study: Co-op WorkTerm

<u>Course</u>		<u>Description</u>	<u>Attempted</u>	<u>Earned</u>	<u>Grade</u>
COOP	5	Co-operative Work Term	0.50	0.00	CR
PSYCH	261	Physiological Psychology	0.50	0.50	100
WKRPT	300M	Work-term Report	0.13	0.00	65
			<u>In GPA</u>	<u>Earned</u>	
Term GPA		100.00 Term Totals	1.13	0.50	
Cumulative GPA		87.36 Cumulative Totals	18.75	18.75	
Major Average:		88.09 Computer Science, Honours, Co-operative Program			
Faculty Average:		89.00 Computer Science, Honours, Co-operative Program			
Academic Standing: Excellent standing Effective 04/30/2017					

### Spring 2017

Program: Computer Science, Honours, Co-operative Program  
Level: 4B Load: Full-Time Form Of Study: Enrolment

<u>Course</u>		<u>Description</u>	<u>Attempted</u>	<u>Earned</u>	<u>Grade</u>
CO	342	Introduction to Graph Theory	0.50	0.50	89
CO	351	Network Flow Theory	0.50	0.50	93
CS	466	Algorithm Design and Analysis	0.50	0.50	88
ECE	486	Robot Dynamics and Control	0.50	0.50	90
PMATH	332	Applied Complex Analysis	0.50	0.50	86
			<u>In GPA</u>	<u>Earned</u>	
Term GPA		89.20 Term Totals	2.50	2.50	
Cumulative GPA		87.58 Cumulative Totals	21.25	21.25	
Major Average:		88.08 Computer Science, Honours, Co-operative Program			
Faculty Average:		89.00 Computer Science, Honours, Co-operative Program			
Academic Standing: Excellent standing Effective 08/31/2017					
Term Honours: Term Dean's Honours List					

### Fall 2017

Program: Computer Science, Honours, Co-operative Program  
Combinatorics & Optimization, Honours, Co-operative Program  
Level: 4B Load: Part-Time Form Of Study: Co-op WorkTerm

<u>Course</u>		<u>Description</u>	<u>Attempted</u>	<u>Earned</u>	<u>Grade</u>
COOP	6	Co-operative Work Term	0.50	0.00	CR
WKRPT	400M	Work-term Report	0.13	0.00	65
			<u>In GPA</u>	<u>Earned</u>	
Term GPA		0.00 Term Totals	0.63	0.00	
Cumulative GPA		87.58 Cumulative Totals	21.25	21.25	

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### Winter 2018

**Program:** Computer Science, Honours, Co-operative Program  
Combinatorics & Optimization, Honours, Co-operative Program  
Cognitive Science Minor  
**Level:** 4B **Load:** Full-Time **Form Of Study:** Enrolment

<u>Course</u>		<u>Description</u>	<u>Attempted</u>	<u>Earned</u>	<u>Grade</u>
CO	759	Topics in Discrete Optimization	0.50	0.50	94
Course Topic:		Comp Discrete Optimization			
CS	467	Introduction to Quantum Information Processing	0.50	0.50	92
CS	485	Machine Learning: Statistical and Computational Foundations	0.50	0.50	100
CS	489	Advanced Topics in Computer Science	0.50	0.50	100
Course Topic:		Intro to Machine Learning			
ENGL	306A	Introduction to Linguistics	0.50	0.50	93
			<u>In GPA</u>	<u>Earned</u>	
Term GPA	95.80	Term Totals	2.50	2.50	
Cumulative GPA	88.44	Cumulative Totals	23.75	23.75	
Major Average:	89.93	Computer Science, Honours, Co-operative Program			
Major Average:	94.14	Combinatorics & Optimization, Honours, Co-operative Program			
Faculty Average:	89.88	Computer Science, Honours, Co-operative Program			
Academic Standing:	Excellent standing Effective 05/18/2018				
Term Honours:	Term Dean's Honours List				

### Milestones

<u>Date Completed</u>	<u>Description</u>	<u>Status</u>
09/23/2013	English Proficiency	Completed
09/23/2013	Workplace Hazardous Materials	Completed
08/30/2014	Work Term 1	Completed
04/30/2015	Work Term 2	Completed
08/24/2015	Technical Presentation	Completed
08/30/2015	Work Report 1	Completed
08/30/2015	Work Report 2	Completed
12/30/2015	Work Term 3	Completed
08/30/2016	Work Term 4	Completed
04/30/2017	Work Report 3	Completed
04/30/2017	Work Term 5	Completed
12/30/2017	Work Report 4	Completed
12/30/2017	Work Term 6	Completed

### Scholarships and Awards

2014 University of Waterloo President's Scholarship  
2018 NSERC Undergraduate Student Research Award

**End of Undergraduate Unofficial Transcript**