

# **MODIFYING PIXEL PROPERTIES IN ADAPTIVE STEGANOGRAPHY USING SUBSTITUTE METHOD**

*A Major project report submitted to  
Jawaharlal Nehru Technological University  
in partial fulfillment of the requirements for the award of Degree of*

**BACHELOR OF TECHNOLOGY**

in

**COMPUTER SCIENCE AND ENGINEERING**

Submitted by

**DADANNAGARI AKHILA (14831A0537)**

**ADICHERLA VENKATASAI (14831A0505)**

**JONNALAGADDA SRIKANTH (14831A0558)**

*Under the guidance of*

**Mr. NUSRATH KHAN**

**(Assistant Professor)**



**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**GURU NANAK INSTITUTE OF TECHNOLOGY**

**(Affiliated to Jawaharlal Nehru Technological University, Hyderabad)**

**Ibrahimpattanam (v), Rangareddy (Dist), Telangana.501506**

**April 2018**



## **GURU NANAK INSTITUTE OF TECHNOLOGY**

**City Office:** B2, 2<sup>nd</sup> Flr, Vikramপুরi Colony, Karkhana Road, Secunderabad-500009, Telangana India.

Ph: +91-40-66323294, Fax: +91-40-27892633

[www.gnithyd.ac.in](http://www.gnithyd.ac.in)

**Campus:** Ibrahimpatnam, R.R. District, Hyderabad, 501506, Telangana, India. Ph: (0/95) 8414-202120

---

### **CERTIFICATE**

This is to certify that the major project entitled “**MODIFYING PIXEL PROPERTIES IN ADAPTIVE STEGANOGRAPHY USING SUBSTITUTE METHOD**”, is being submitted by **Ms. DADANNAGARI AKHILA** bearing Roll No: **14831A0537**, **Mr. ADICHERLA VENKATASAI** bearing roll no: **14831A0505**, and **Mr. JONNALAGADDA SRIKANTH** bearing Roll No : **14831A0558**, in partial fulfillment for the award of the Degree of Bachelor of Technology in Computer Science and Engineering to the Jawaharlal Technological University is a record of bonafide work carried out by them under my guidance and supervision.

The results embodied in this Major-project report have not been submitted to any other University or Institute for the award of any Degree or Diploma

**Internal Guide**

**(Mr. NUSRATH KHAN)**

**(Assistant Professor)**

**Project Coordinator**

**(Mr. N. SRIHARI RAO)**

**(Associate Professor)**

**External Examiner**

**(Dr. S. SENTHIL KUMAR)**

**Head of the Department**



## **GURU NANAK INSTITUTE OF TECHNOLOGY**

**City Office:** B2, 2<sup>nd</sup> Flr, Vikramপুরi Colony, Karkhana Road, Secunderabad-500009, Telangana India.

Ph: +91-40-66323294, Fax: +91-40-27892633

[www.gnithyd.ac.in](http://www.gnithyd.ac.in)

**Campus:** Ibrahimpatnam, R.R. District, Hyderabad, 501506, Telangana, India. Ph: (0/95) 8414-202120

---

### **VISION OF GNIT**

To be a world – class educational and research institution in the service of humanity by promoting high quality Engineering and Management Education.

### **MISSION OF GNIT**

M1: Imbibe soft skills and technical skills.

M2: Develop the faculty to reach the international standards.

M3: Maintain high academic standards and teaching quality promotes the Analytical thinking and independent judgement.

M4: Promote Research, Innovation and Product development by collaboration with reputed foreign universities.

M5: Offer collaborative industry programs in emerging areas and spirit of enterprise.



## **GURU NANAK INSTITUTE OF TECHNOLOGY**

**City Office:** B2, 2<sup>nd</sup> Flr, Vikramপুরi Colony, Karkhana Road, Secunderabad-500009, Telangana India.

Ph: +91-40-66323294, Fax: +91-40-27892633

[www.gnithyd.ac.in](http://www.gnithyd.ac.in)

**Campus:** Ibrahimpatnam, R.R. District, Hyderabad, 501506, Telangana, India. Ph: (0/95) 8414-202120

---

### **DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

#### **VISION**

To be a leading Department of Computer Science and Engineering in the region.

#### **MISSION**

- Nurture young individuals into knowledgeable, skillful and ethical professionals in their pursuit of Computer Science and Engineering.
- Nurture the faculty to expose them to world – class infrastructure.
- Sustain high performance by excellence in teaching, research and innovations.
- Extensive partnerships and collaborations with foreign universities for technology upgradation.
- Develop Industry – Interaction for innovation and product development.



## **GURU NANAK INSTITUTE OF TECHNOLOGY**

**City Office:** B2, 2<sup>nd</sup> Flr, Vikramপুরi Colony, Karkhana Road, Secunderabad-500009, Telangana India.

Ph: +91-40-66323294, Fax: +91-40-27892633

[www.gnithyd.ac.in](http://www.gnithyd.ac.in)

**Campus:** Ibrahimpatnam, R.R. District, Hyderabad, 501506, Telangana, India. Ph: (0/95) 8414-202120

---

### **DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

#### **Program Educational Objectives (PEOs)**

**PEO-1:** Graduates shall have the ability to apply knowledge and technical skills in emerging areas of Computer Science and Engineering for higher studies, research, employability, product development and realistic problems.

**PEO-2:** Graduates shall maintain ethical conduct, sense of responsibility to serve the society and protect the environment.

**PEO-3:** Graduates shall possess academic excellence with innovative insight, soft skills, managerial skills, leadership qualities, knowledge of contemporary issues for successful professional career.

#### **Program Outcomes (POs)**

- A. An ability to apply knowledge mathematics science and engineering.
- B. An ability to design and conduct experiments as well as to analyze and interpret data.
- C. An ability to design a system, component, or process to meet desire needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- D. An ability to function on multidisciplinary teams.
- E. An ability to identify, formulate, and solve engineering problems.
- F. An understanding of Professional and ethical responsibility.
- G. An ability to communicate effectively.
- H. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- I. A recognition of the need for, and an ability to engage in life-long learning.
- J. Knowledge of contemporary issues.
- K. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.



## GURU NANAK INSTITUTE OF TECHNOLOGY

**City Office:** B2, 2<sup>nd</sup> Flr, Vikramপুরi Colony, Karkhana Road, Secunderabad-500009, Telangana India.

Ph: +91-40-66323294, Fax: +91-40-27892633

[www.gnithyd.ac.in](http://www.gnithyd.ac.in)

**Campus:** Ibrahimpatnam, R.R. District, Hyderabad, 501506, Telangana, India. Ph: (0/95) 8414-202120

### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

#### **MAPPING WITH POs AND PEOs**

S No	Content	PO's	PEO's
1	Abstract	A	1,2,3
2	Introduction	A,I	1,2,3
3	Literature Review	G,H,J	1,2,3
4	Design	A,B,C,F,K	1,2,3
5	Analysis	B,I	1,2,3
6	Implementation and Testing	A,E,H	1,2,3
7	Results	D,G	1,2,3

## **ACKNOWLEDGEMENT**

It is indeed our earnest duty to thank all the people who has instrumented us for the completion of our project work. First and foremost, we proudly thank the almighty for the unfathomable blessings showered on us on establishing our project sucessfully. We also thank parents for directing us in glorious path by giving moral courage and pellucid help.

As the outlet, We express our profound gratitude to our **Principal Dr. S. Sreenatha Reddy** an adroit person who has paved many provisions to complete this project.

We can't find an apt word to express our deep sense of reverence and gratitude to **Dr. S. Senthil kumar, Head of the Department** of Bachelor of Technology in Computer Science & Engineering for his valuable and timely suggestions.

We specially thank project coordinator **Mr. N. Srihari Rao, Associate Professor** CSE, GNIT for providing seamless support and right suggestions that are given in the development of the project

We offer our sincere gratitude to our internal guide **Mr. Nusrath khan, Assistant Professor** in Computer Science & Engineering, whose constant encouragement and cooperation has made successful in completing the project.

Finally, we thank from any heart, all the officials in Department of Computer Science & Engineering, friends and people who spread their valuable time and knowledge to complete this project.

**Ms. DADANNAGARI AKHILA(14831A0537)**

**Mr. ADICHERLA VENKATASAI(14831A0505)**

**Mr. JONNALAGADDA SRIKANTH(14831A0558)**

## **DECLARATION**

We hereby declare that major project report entitled “**MODIFYING PIXEL PROPERTIES IN ADAPTIVE STEGANOGRAPHY USING SUBSTITUTE METHOD**”, is the work done by **Ms. DADANNAGARI AKHILA** bearing Roll No: **14831A0537** , **Mr. ADICHERLA VENKATASAI** bearing Roll No: **14831A0505**, and **Mr. JONNALAGADDA SRIKANTH** bearing roll no: **14831A0558** towards fulfillment of the requirement of the Degree of Bachelor of Technology in Computer Science and Engineering to Jawaharlal Nehru Technological University, Hyderabad for A.Y.:2017-2018 is the result of work carried out under the guidance of **Mr. NUSRATH KHAN, ASSISTANT PROFESSOR**, Guru Nanak Institute of Technology, Hyderabad.

We further declare that this project report has not been previously submit before either in part or full for the award of any degree or any diploma by any organization or any university.

**Ms. DADANNAGARI AKHILA(14831A0537)**

**Mr. ADICHERLA VENKATASAI(14831A0505)**

**Mr. JONNALAGADDA SRIKANTH(14831A0558)**



# **MODIFYING PIXEL PROPERTIES IN ADAPTIVE STEGANOGRAPHY USING SUBSTITUTE METHOD**

*A Major project report submitted to  
Jawaharlal Nehru Technological University  
in partial fulfillment of the requirements for the award of Degree of*

**BACHELOR OF TECHNOLOGY**

in

**COMPUTER SCIENCE AND ENGINEERING**

Submitted by

**DADANNAGARI AKHILA : 14831A0537**

*Under the guidance of*

**Mr. NUSRATH KHAN**

**(Assistant Professor)**



**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**GURU NANAK INSTITUTE OF TECHNOLOGY**

**(Affiliated to Jawaharlal Nehru Technological University, Hyderabad)**

**Ibrahimpattanam (v), Rangareddy (Dist), Telangana-501506**

**April 2018**

# **MODIFYING PIXEL PROPERTIES IN ADAPTIVE STEGANOGRAPHY USING SUBSTITUTE METHOD**

*A Major project report submitted to  
Jawaharlal Nehru Technological University  
in partial fulfillment of the requirements for the award of Degree of*

**BACHELOR OF TECHNOLOGY**

in

**COMPUTER SCIENCE AND ENGINEERING**

Submitted by

**JONNALAGADDA SRIKANTH : 14831A0558**

*Under the guidance of*

**Mr. NUSRATH KHAN**

**(Assistant Professor)**



**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**GURU NANAK INSTITUTE OF TECHNOLOGY**

**(Affiliated to Jawaharlal Nehru Technological University, Hyderabad)**

**Ibrahimpattanam (v), Rangareddy (Dist), Telangana.501506**

**April 2018**

# **MODIFYING PIXEL PROPERTIES IN ADAPTIVE STEGANOGRAPHY USING SUBSTITUTE METHOD**

*A Major project report submitted to  
Jawaharlal Nehru Technological University  
in partial fulfillment of the requirements for the award of Degree of*

**BACHELOR OF TECHNOLOGY**

in

**COMPUTER SCIENCE AND ENGINEERING**

Submitted by

**ADICHERLA VENKATASAI : 14831A0505**

*Under the guidance of*

**Mr. NUSRATH KHAN**

**(Assistant Professor)**



**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**GURU NANAK INSTITUTE OF TECHNOLOGY**

**(Affiliated to Jawaharlal Nehru Technological University, Hyderabad)**

**Ibrahimpattanam (v), Rangareddy (Dist), Telangana-501506**

**April 2018**



## **GURU NANAK INSTITUTE OF TECHNOLOGY**

**City Office:** B2, 2<sup>nd</sup> Flr, Vikrampuri Colony, Karkhana Road, Secunderabad-500009, Telangana India.

Ph: +91-40-66323294, Fax: +91-40-27892633

[www.gnithyd.ac.in](http://www.gnithyd.ac.in)

**Campus:** Ibrahimpatnam, R.R. District, Hyderabad, 501506, Telangana, India. Ph: (0/95) 8414-202120

---

### **CERTIFICATE**

This is to certify that the major project entitled “**MODIFYING PIXEL PROPERTIES IN ADAPTIVE STEGANOGRAPHY USING SUBSTITUTE METHOD**”, is being submitted by **Ms. DADANNAGARI AKHILA** bearing Roll no: **14831A0537** in partial fulfillment for the award of the Degree of Bachelor of Technology in Computer Science and Engineering to the Jawaharlal Technological University is a record of bonafide work carried out by them under my guidance and supervision.

The results embodied in this Major-project report have not been submitted to any other University or Institute for the award of any Degree or Diploma

**Internal Guide**

**(Mr. NUSRATH KHAN)**

**(Assistant Professor)**

**Project Coordinator**

**(Mr. N. SRIHARI RAO)**

**(Associate Professor)**

**External Examiner**

**(Dr. S. SENTHIL KUMAR)**

**Head of the Department**



## **GURU NANAK INSTITUTE OF TECHNOLOGY**

**City Office:** B2, 2<sup>nd</sup> Flr, Vikramপুরi Colony, Karkhana Road, Secunderabad-500009, Telangana India.

Ph: +91-40-66323294, Fax: +91-40-27892633

[www.gnithvd.ac.in](http://www.gnithvd.ac.in)

**Campus:** Ibrahimpatnam, R.R. District, Hyderabad, 501506, Telangana, India. Ph: (0/95) 8414-202120

---

### **CERTIFICATE**

This is to certify that the major project entitled “**MODIFYING PIXEL PROPERTIES IN ADAPTIVE STEGANOGRAPHY USING SUBSTITUTE METHOD**”, is being submitted by **Mr. ADICHERLA VENKATASAI** bearing Roll no: **14831A0505** in partial fulfillment for the award of the Degree of Bachelor of Technology in Computer Science and Engineering to the Jawaharlal Technological University is a record of bonafide work carried out by them under my guidance and supervision.

The results embodied in this Major-project report have not been submitted to any other University or Institute for the award of any Degree or Diploma

**Internal Guide**

**(Mr. NUSRATH KHAN)**

**(Assistant Professor)**

**Project Coordinator**

**(Mr. N. SRIHARI RAO)**

**(Associate Professor)**

**(Dr. S. SENTHIL KUMAR)**

**External Examiner**

**Head of the Department**



## **GURU NANAK INSTITUTE OF TECHNOLOGY**

**City Office:** B2, 2<sup>nd</sup> Flr, Vikramপুরi Colony, Karkhana Road, Secunderabad-500009, Telangana India.

Ph: +91-40-66323294, Fax: +91-40-27892633

[www.gnithyd.ac.in](http://www.gnithyd.ac.in)

**Campus:** Ibrahimpatnam, R.R. District, Hyderabad, 501506, Telangana, India. Ph: (0/95) 8414-202120

---

### **CERTIFICATE**

This is to certify that the major project entitled “**MODIFYING PIXEL PROPERTIES IN ADAPTIVE STEGANOGRAPHY USING SUBSTITUTE METHOD**”, is being submitted by **Mr. JONNALAGADDA SRIKANTH** bearing Roll no: **14831A0558** in partial fulfillment for the award of the Degree of Bachelor of Technology in Computer Science and Engineering to the Jawaharlal Technological University is a record of bonafide work carried out by them under my guidance and supervision.

The results embodied in this Major-project report have not been submitted to any other University or Institute for the award of any Degree or Diploma

**Internal Guide**

**(Mr.NUSRATH KHAN)**

**(Assistant Professor)**

**Project Coordinator**

**(Mr. N. SRIHARI RAO)**

**(Associate Professor)**

**External Examiner**

**(Dr. S. SENTHIL KUMAR)**

**Head of the Department**

## **ACKNOWLEDGEMENT**

It is indeed my earnest duty to thank all the people who has instrumented us for the completion of our project work. First and foremost, we proudly thank the almighty for the unfathomable blessings showered on us on establishing our project sucessfully. I also thank parents for directing us in glorious path by giving moral courage and pellucid help.

As the outlet, I express my profound gratitude to our **Principal Dr. S. Sreenatha Reddy** an adroit person who has paved many provisions to complete this project.

I can't find an apt word to express our deep sense of reverence and gratitude to **Dr. S. Senthil kumar, Head of the Department** of Bachelor of Technology in Computer Science & Engineering for his valuable and timely suggestions.

I specially thank project coordinator **Mr. N. Srihari Rao, Associate Professor** CSE, GNIT for providing seamless support and right suggestions that are given in the development of the project

I offer my sincere gratitude to our internal guide **Mr. Nusrath khan, Assistant Professor** in Computer Science & Engineering, whose constant encouragement and cooperation has made successful in completing the project.

Finally, I thank from my heart, all the officials in Department of Computer Science & Engineering, friends and people who spread their valuable time and knowledge to complete this project.

**Ms. DADANNAGARI AKHILA(14831A0537)**

## **ACKNOWLEDGEMENT**

It is indeed my earnest duty to thank all the people who has instrumented us for the completion of our project work. First and foremost, we proudly thank the almighty for the unfathomable blessings showered on us on establishing our project sucessfully. I also thank parents for directing us in glorious path by giving moral courage and pellucid help.

As the outlet, I express my profound gratitude to our **Principal Dr. S. Sreenatha Reddy** an adroit person who has paved many provisions to complete this project.

I can't find an apt word to express our deep sense of reverence and gratitude to **Dr. S. Senthil kumar, Head of the Department** of Bachelor of Technology in Computer Science & Engineering for his valuable and timely suggestions.

I specially thank project coordinator **Mr. N. Srihari Rao, Associate Professor** CSE, GNIT for providing seamless support and right suggestions that are given in the development of the project

I offer my sincere gratitude to our internal guide **Mr. Nusrath khan, Assistant Professor** in Computer Science & Engineering, whose constant encouragement and cooperation has made successful in completing the project.

Finally, I thank from my heart, all the officials in Department of Computer Science & Engineering, friends and people who spread their valuable time and knowledge to complete this project.

**Mr. ADICHERLA VENKATASAI(14831A0505)**



## **ACKNOWLEDGEMENT**

It is indeed my earnest duty to thank all the people who has instrumented us for the completion of our project work. First and foremost, we proudly thank the almighty for the unfathomable blessings showered on us on establishing our project sucessfully. I also thank parents for directing us in glorious path by giving moral courage and pellucid help.

As the outlet, I express my profound gratitude to our **Principal Dr. S. Sreenatha Reddy** an adroit person who has paved many provisions to complete this project.

I can't find an apt word to express our deep sense of reverence and gratitude to **Dr. S. Senthil kumar, Head of the Department** of Bachelor of Technology in Computer Science & Engineering for his valuable and timely suggestions.

I specially thank project coordinator **Mr. N. Srihari Rao, Associate Professor** CSE, GNIT for providing seamless support and right suggestions that are given in the development of the project

I offer my sincere gratitude to our internal guide **Mr. Nusrath khan, Assistant Professor** in Computer Science & Engineering, whose constant encouragement and cooperation has made successful in completing the project.

Finally, I thank from my heart, all the officials in Department of Computer Science & Engineering, friends and people who spread their valuable time and knowledge to complete this project.

**Mr. JONNALAGADDA SRIKANTH(14831A0558)**

## **DECLARATION**

I hereby declare that major project report entitled “**MODIFYING PIXEL PROPERTIES IN ADAPTIVE STEGANOGRAPHY USING SUBSTITUTE METHOD**”, is the work done by **DADANNAGARI AKHILA** bearing Roll No: **14831A0537** towards fulfillment of the requirement of the Degree of Bachelor of Technology in Computer Science and Engineering to Jawaharlal Nehru Technological University, Hyderabad for A.Y.:2017-2018 is the result of work carried out under the guidance of **Mr. NUSRATH KHAN, ASSISTANT PROFESSOR**, Guru Nanak Institute of Technology, Hyderabad.

I further declare that this project report has not been previously submit before either in part or full for the award of any degree or any diploma by any organization or any university.

**Ms. DADANNAGARI AKHILA(14831A0537)**

## **DECLARATION**

I hereby declare that major project report entitled “**MODIFYING PIXEL PROPERTIES IN ADAPTIVE STEGANOGRAPHY USING SUBSTITUTE METHOD**”, is the work done by **Mr. ADICHERLA VENKATA SAI** bearing Roll No: **14831A0505** towards fulfillment of the requirement of the Degree of Bachelor of Technology in Computer Science and Engineering to Jawaharlal Nehru Technological University, Hyderabad for A.Y.:2017-2018 is the result of work carried out under the guidance of **Mr. NUSRATH KHAN, ASSISTANT PROFESSOR**, Guru Nanak Institute of Technology, Hyderabad.

I further declare that this project report has not been previously submit before either in part or full for the award of any degree or any diploma by any organization or any university.

**Mr. ADICHERLA VENKATASAI(14831A0505)**

## **DECLARATION**

I hereby declare that major project report entitled “**MODIFYING PIXEL PROPERTIES IN ADAPTIVE STEGANOGRAPHY USING SUBSTITUTE METHOD**”, is the work done by **Mr. JONNALAGADDA SRIKANTH** bearing Roll No: **14831A0558** towards fulfillment of the requirement of the Degree of Bachelor of Technology in Computer Science and Engineering to Jawaharlal Nehru Technological University, Hyderabad for A.Y.:2017-2018 is the result of work carried out under the guidance of **Mr. NUSRATH KHAN, ASSISTANT PROFESSOR**, Guru Nanak Institute of Technology, Hyderabad.

I further declare that this project report has not been previously submit before either in part or full for the award of any degree or any diploma by any organization or any university.

**Mr. JONNALAGADDA SRIKANTH (14831A0558)**